

**10POINTER**  
Your Study Companion

# UPPSC

## PRELIMS

---

# GEOGRAPHY & ENVIRONMENT

[www.10pointer.com](http://www.10pointer.com)



# UPPSC Prelims

---

---

## Geography & Environment

---

---

# CONTENTS

◦ Geography of Uttar Pradesh: At a Glance .....	5
◦ Geological Structure.....	6
◦ Agriculture .....	14
◦ UTTAR PRADESH AGRICULTURE POLICY 2013 .....	17
◦ Air Pollution in Uttar Pradesh.....	25

## GEOGRAPHY OF UTTAR PRADESH: AT A GLANCE

<b>Latitude</b>	28° 12' 27.3924'' N
<b>Longitude</b>	79° 49' 35.9760'' E
<b>Area</b>	2,43,286 km <sup>2</sup> (93,930 sq. miles)
<b>Population (2011)</b>	199,812,341 (a) Males : 104,480,510 (b) Females : 95,331,831
<b>Population Density</b>	820/km <sup>2</sup> (2,100/sq. miles)
<b>Crops</b>	Paddy, Wheat, Barley, Millet, Maize, Urad (Black Gram), Moong (Green Gram) Arhar etc.
<b>Fruits</b>	Mango, Guava etc
<b>Rivers</b>	Ganga, Yamuna, Saryu, Gomti, Ram Ganga, Ghagra, Betwa, Ken

### ■ Location

- ▶ Uttar Pradesh stretches along the Indian border with Nepal from Northern India towards the East of India.
- ▶ The Indian Standard Time Median that is some 5 and a Half hour or 82.5° ahead of GMT passes through Allahabad, a district in Uttar Pradesh.
- ▶ It is the most populous and fourth largest state of India. It lies in the north-central part of the country. It is 7.33% of the total percentage of the country's area.
- ▶ The state is bordered by the state of Uttarakhand and Nepal to the north, Bihar to the east, Jharkhand and Chhattisgarh to the southeast, Madhya Pradesh to the south, and Rajasthan and Haryana and the national capital territory of Delhi to the west. Hence, the boundary of the state is bounded by 8 states and 1 Union Territory (Delhi).

### ■ States having border with districts of Uttar Pradesh

State	Districts
<b>Haryana</b>	Saharanpur, Shamli, Baghpat, Gautam Budh Nagar, Aligarh and Mathura (6 districts)
<b>Rajasthan</b>	Agra and Mathura (2 districts)
<b>Madhya Pradesh</b>	Agra, Etawah, Jalaun, Jhansi, Lalitpur, mahoba, Banda, Chitrakoot, Allahabad, Mirzapur and Sonbhadra (11 districts)
<b>Uttarakhand</b>	Saharanpur, Muzaffarnagar, Bijnor, Moradabad, Rampur, Bareilly and Pilibhit (7 districts)

<b>Chhattisgarh</b>	Sonbhadra (1 district)
<b>Jharkhand</b>	Sonbhadra (1 district)
<b>Himachal Pradesh</b>	Saharanpur (1 district)
<b>Bihar</b>	Sonbhadra, Chandrauli, Ghazipur, Ballia, Deoria, Kushinagar and Maharajganj (7 districts)
<b>Delhi (Union Territory)</b>	Ghaziabad and Gautam Budh Nagar (2 districts)
<b>Nepal (International Boundary)</b>	Maharajganj, Siddharthpur, Balrampur, Shravasti, Bahraich, Lakhimpur and Pilibhit (7 districts)

- ▶ The longest border touching UP is that of Madhya Pradesh, whereas the smallest border is of Himachal Pradesh.
- ▶ The northernmost district of UP's Saharanpur and southernmost district is Sonbhadra.
- ▶ The length of the state from East to West is 650 km and breadth from South to North is 240 km.

## GEOLOGICAL STRUCTURE

### ■ Classification of the U.P. Rocks

- ▶ **Rocks of the Vindhyan system:** These are sedimentary rocks, which are found in the Semari range in the Son valley.
- ▶ **Bundelkhand Granite Gneiss:** It was formed in Pre-Paleozoic Era. It consists of minerals like red orthoclase, feldspar, chloride, red quartz etc.
- ▶ In Tertiary period, the Himalayan mountain range was formed, which was a result of deposition and upliftment of sedimentary and metamorphic rocks in the Tethys Sea (lies between Angaraland and Gondwanaland). This range is known as Himalayan Range.
- ▶ **Rocks of the Quaternary system:** These rocks are found in the Ganga plain. Quaternary epoch is divided chronologically into two parts: Pleistocene and Holocene periods. During the upper and middle Pleistocene periods, old alluvial soil was formed which is known as bangar. The formation of the alluvial soil began at the end of the Pleistocene period and it is still going on in the present Holocene period. It is known as Khadar.

### ■ Location and Landform

- ▶ The state of Uttar Pradesh structurally forms part of the Indo-Gangetic plain, which lies between the northern Gondwana land of Peninsular India in the south and the recently built Himalayan chain of mountains in the north.
- ▶ Division of Uttar Pradesh into 3 major topographical regions:
  - Siwalik foothills of Himalayas and the Terai region border in north U.P.
  - Gangetic plains
  - Vindhya Range and plateau lie in southern U.P.

### ■ Siwalik foothills

- ▶ Siwalik Range forms the southern foothills of the Himalayas which border U.P. on the north which is characterised by the marshes, thick forests, swamps rich in clay and tall grasslands that runs parallel to the bhabhar tract is called **Terai region**.

- ▶ The thin strip of land running from Saharanpur in the west to Deoria in the east is known as Bhabhar and Terai. The Bhabhar area in Saharanpur, Bijnor and Pilibhit district skirts round the Shiwalik hills.
- ▶ The Terai area, which runs through parts of Saharanpur, Bijnor, Rampur, Bareilly, Pilibhit, Lakhimpur Kheri, Bahraich, Gonda, Basti, Siddharthnagar, Gorakhpur, Maharajganj and Deoria districts was once a belt, some 80 to 90 km wide, covered with forests and tall, dense grasses.
- ▶ This area is composed of fine alluvium primarily sand, clay, silt and gravel.
- ▶ This region is a fertile land to cultivate rich crops like jute, sugarcane, wheat and paddy.
- ▶ The plant species like Haldu, Tendu, Semal, Sal etc are found and Sawana type grass is also seen in the Terai region.
- ▶ As the rivers flow down the slopes of Bhabhar and course through the relatively planar areas of Terai the sediments are deposited in shallow beds, and the sunken river streams of Bhabhar reemerge on the surface, causing massive floods.
  - Width of Bhabhar — 8-16 km
  - Width of Terai — 15-30 km

## ■ Gangetic Plains

- ▶ The expansion of this plain is in the states of Uttar Pradesh, Bihar and West Bengal. The northern part of the Ganga in Uttar Pradesh can be divided into two parts: the western part is known as the Plain of Rohilkhand whereas the eastern part is called the Plain of Awadh.
- ▶ The upper and middle Gangetic Plain comprises of western U.P.; and eastern U.P. and Bihar respectively.
- ▶ There are too many ox-bow lakes in the middle Gangetic plain because rivers meander in this plain.
- ▶ River Ganga make the soil of Gangetic plains highly fertile and suitable for growing crops like rice, wheat, barley, gram etc.
- ▶ This region lies between Bhabhar-Terai region in the North and plateau region in the South. It is also known as Doab and Ganga-Yamuna plain.
- ▶ These plains span about three-fourths of the total area of the state, stretching from east to west and covering most of its central portion.
- ▶ Its flat topography comprises of several physical features like rivers, lakes, ponds, elevation ranging from 60 mts in the east to 300 mts in the north-west and a gradient of 2 m/sq km.
- ▶ This plain region is divided into two parts: Bangar land and Khadar land. Bangar land is the high elevated land which is free from flood water, which is popular for its old alluvial deposits. Khadar land is a low-land area where waterlogging is almost seen. This land is more fertile than Bangar land.
- ▶ Triveni Sangam, in Prayagraj has the confluence of three rivers- the Ganga, the Yamuna and the Saraswati.

## ■ Vindhya Range And Plateau Region

- ▶ Vindhyas are a discontinuous range of hills and mountains and also known as Bundelkhand Plateau.
- ▶ The southernmost fringe of the Gangetic plains in U.P. is rendered by hard and varied topography of hills, highlands and plateaus.
- ▶ With an average elevation of 300 mts, this is a low-lying range that receives less rainfall and is devoid of adequate water resources, thus farmers in this region resort to dry-farming.
- ▶ Following 4 divisions fall under the canopy of this region:
  - Bundelkhand plateau – Jhansi, Jalaun, Banda, Hamirpur, Mahoba, Chitrakoot, Lalitpur

- Meja and Karchhana tehsils of Allahabad district
- Mirzapur district lying south of Ganga river
- Chakia Tehsil of Varanasi district

## ■ Drainage System

- ▶ The state is well drained by a number of rivers originating in either the Himalayas to the north or the Vindhya Range to the south.
- ▶ The Ganges and its main tributaries—the Yamuna, the Ramganga, the Gomati, the Ghaghara, and the Gandak rivers—are fed by the perpetual snows of the Himalayas.
- ▶ After flowing through 28 districts of Uttar Pradesh, the Ganga river enters into Bihar state.

Place	Confluence of rivers
Devprayag	Bhagirathi+Alaknanda
Rudraprayag	Mandakini+Alaknanda
Karnaprayag	Pindar+Alaknanda
Vishnuprayag	Dhauliganga+Alaknanda

- ▶ Moradabad, Bareilly, Badaun, Shahjahanpur and Hardoi cities of Uttar Pradesh are situated on the banks of Ramganga river. This river joins the Ganga near Kannauj. Kalagarh dam is situated on this river.
- ▶ The Chambal, the Betwa, and the Ken, originating from the Vindhya Range, drain the southwestern part of the state before joining the Yamuna.
- ▶ The Son, also originating in the Vindhya Range, drains the southeastern part of the state and joins the Ganga beyond the state borders (in Bihar).
- ▶ After leaving the outermost Shivalik foothills, the Gandak river meets with the Ganga river near Hajipur after crossing through the borders of Maharajganj and Kushinagar districts of Uttar Pradesh.
- ▶ Ghaghra river forms the boundary of Lakhimpur and Bahraich before entering into Uttar Pradesh.
- ▶ Hindon river flows between Ganga and Yamuna rivers through the districts of Muzaffarnagar, Meerut, Baghpat and Ghaziabad.
- ▶ In Uttar Pradesh, Rapti river flows through Shravasti, Basti, Sant Kabir Nagar, Gonda, Gorakhpur, Bansi, Bahraich, Balrampur and Siddharth Nagar.
- ▶ It merges with Ghaghra river near Barhaj in Deoria district.
- ▶ It is also known as Sorrow of Gorakhpur.
- ▶ The river Karmanasa originates from the Kaimur range (Sarodgarh) in Mirzapur (Uttar Pradesh) and joins the Ganga on its right bank near Chausa. It makes the boundary of Bihar and Uttar Pradesh. According to the Hindu belief this river originates from the mouth of a demon called Trishanku. That is why it is considered unholy and inauspicious.
- ▶ The river Gomati originates from the district of Pilibhit. It joins the Ganga near Ghazipur. Lucknow, Sultanpur, Ghazipur and Jaunpur are the two important towns standing on its banks.
- ▶ The river Sarda originates from the Milam glacier in the Himalayas in Nepal. Initially, it is known as Kaliganga on the Indo-Nepal border. When it joins the river Ghaghara in the district of Barabanki in Uttar Pradesh, it is known as Chauk.

## ■ Various River Valley Projects

- ▶ **The Ramganga Project:** It is on the river Ramganga, a tributary of the Ganga.
- ▶ **The Gandak Project:** It is a joint project of Uttar Pradesh, Bihar and Nepal. Hydro-electricity is produced at Suratpura (Nepal) on the river andak. The dam has been built at Bhaisalotan (Valmikinagar) in Bihar.
- ▶ **The Rihand Project:** It is mainly of Uttar Pradesh but Bihar and Madhya Pradesh also benefit from it. Bihar gets water which reaches the Son Canal through the Son river. This project has been executed at Pipri (Sonebhadra district, U.P.) on the river Rihand, a tributary of the Son. The reservoir named Govind Ballabh Pant Sagar has been constructed on the border of Uttar Pradesh and Chhattisgarh.
- ▶ **The Bansagar Project:** It is a joint project of Madhya Pradesh, Uttar Pradesh and Bihar on the Son. The Basnagar dam has been built on the Son in the district of Shahdol in Madhya Pradesh.
- ▶ **The Matatila Project:** It is a joint project of Madhya Pradesh and Uttar Pradesh on the river Betwa. The dam has been built in Uttar Pradesh.

## ■ U.P.'s main towns situated on the banks of rivers:

Town	River
Ghaziabad	Hindon
Moradabad	Ramganga
Bareilly	Ramganga
Faizabad	Ghaghara
Jaunpur	Gomati
Lucknow	Gomati
Shrawasti	Rapti
Gorakhpur	Rapti
Ayodhya	Saryu
Kannauj	Ganga
Kanpur	Ganga
Allahabad	Ganga and Yamuna
Varanasi	Ganga
Mathura	Yamuna
Agra	Yamuna

## ■ Lakes of Uttar Pradesh

- ▶ Ramgarhtaal and Chiluataal: Gorakhpur
- ▶ Bakhira Jheel: Sant Kabir Nagar
- ▶ Karela and Etauja Jheel: Lucknow

- ▶ Nawabgunj Jheel, Kundra Samundra: Unnao
- ▶ Badataal (Gokhur): Shahjahanpur
- ▶ Payag Jheel: Bahraich
- ▶ Jirgo and Tirsi Lake, Tanda darti Taal (Dragoart): Mirzapur
- ▶ Bhugetaal and Visaithataal: Raebareli
- ▶ Liloor Jheel: Bareli
- ▶ Thithoora Jheel, Morai Taal: Fatehpur
- ▶ Beti, Ajgara and Nuiya Jheel: Pratapgarh
- ▶ Surha Taal: Balia
- ▶ Moti and Gaur Jheel: Rampur
- ▶ Shukrataal: Muzaffarnagar
- ▶ Raam Taal: Meerut
- ▶ Kimath Taal: Agra
- ▶ Sheikh Jheel (In the process to develop in the form of National Bird Sanctuary): Aligarh
- ▶ Govind Ballabh Pant Sagar (Artificial lake): Sonbhadra
- ▶ Alwara Jheel (The arrival site of foreign birds): Kaushambi
- ▶ Aundhi Taal: Varanasi
- ▶ Raja ka Bandh, laundhi and Bhojpur Taal: Sultanpur
- ▶ Darwan Jheel: Faizabad
- ▶ Bal Hapara: Kanpur
- ▶ Lakshmi Taal, Baruasagar and Bhasneh: Jhansi
- ▶ Sagar Taal: Badaun
- ▶ Madan Sagar: Mahoba
- ▶ Pangali Fulhar or Gomti Taal: Pilibhit
- ▶ Dahar Jheel, Bhijwaan Jheel: Hardoi
- ▶ Deoria Tal: Kannauj
- ▶ Bhakha Jheel: Etawah
- ▶ Sita Kund (Misrikh), Chakra Kund (Naumish): Sitapur
- ▶ Bharatkund: Ayodhya
- ▶ Radhakund, Shyam Kund, Govind Kund and Mansi Ganga Kund: Govardhan, Mathura
- ▶ Kokila Kund, Krishna Kund: Kokila Forest, Mathura
- ▶ Nauh Jheel: Mathura

## ■ Soils

- ▶ The soils are developed from alluvium deposited by the two major rivers of the state, i.e., The Ganga, The Yamuna and their tributaries.
- ▶ The general slope of the Gangetic plain is from north-west to southeast, and the finer fraction increases from western to eastern parts of the state due to gravimetric assorting of soil particles.
- ▶ The soils in the southern part of the state are generally mixed red and black or red-to-yellow.
- ▶ The soils are natural, dynamic, heterogeneous, non-renewable resources, which support plant and animal life.
- ▶ The flora consists of a variety of deciduous trees, shrubs and grasses.
- ▶ The soils are very deep, highly productive and intensively cultivated for wheat, rice, sugarcane, etc. However, problems of salinity, flooding, light texture etc. are also confronted in this region.



- ▶ The major constraints of the piedmonts are the low moisture holding capacity and root zone limitations.
- ▶ Presence of boulders in the substratum leads to an acute scarcity of moisture for normal crop growth, whereas in the Terai belt problem of wetness, overflows and at places erosion are observed.

### ◉ **Soils of Bhabar and Terai Region:**

- Bhabar region is not suitable for agriculture as the soil of this region is porous. Only big trees with large roots thrive in this region. While the soil of terai region is silty in nature. It is rich in nitrogen and organic matter but is deficient in phosphate. It is suitable for the cultivation of jute, sugarcane, rice and wheat etc but is generally covered by tall grasses and forests. It is the zone of sandy and clay soils.

### ◉ **Soil of Gangetic Plain:**

- These soils show maximum profile development which can be attributed to the Quaternary period. The dominant soils are deep, well drained coarse-loamy/fine-loamy/fine silty (calcareous/non-calcareous). They are the most potent and intensively cultivated soil of the state.
- Alluvial soil of this plain is made up of variety of materials like potash, phosphoric acid and alkalis are adequate, while iron oxide and lime vary within a wide range. But nitrogen and fossil are low in content.
- Alluvial soil is divided into two parts: Bangar soil and Khadar soil
- Bangar soil covers the largest part of the plain. It is not very fertile due to deposits of kankar and it has a low upland covered by laterite deposits. It is known by various names like loam, clay, sandy loam, bhur, clayey loam etc. This soil lacks nitrogen and phosphorus due to intensive agriculture.
- Khadar soil is found in flood regions of UP. it is porous, fine, light brown in colour and have capacity of water retention as compared to Bangar soil. It does not contain calcareous deposits of calcium. It is made of new alluvium and fine particles. It is known by various names such that silt, loam, clayey loam. Magnesium, potash, lime and organic matter are found in this soil.

### ◉ **Soils of Western, Central and Eastern Ranges of Gangetic Region:**

- In the western region, the soil is dark grey in colour and loam to sandy loam in nature. Deep and fertile soils are found in the plain areas such that Saharanpur, Meerut, Muzaffarnagar districts. Heavy loam soils are found in eastern parts like Bareilly, Bijnor, Pilibhit and Moradabad.
- Central region is characterised by the sandy loam soils. While the north eastern part of the region has sandy and loam soils which is also acidic in nature.
- Bhat, Banjar and Dhuh (found along the river banks) are the three types of soils found in the eastern part of the Gangetic plains. It is sandy loam in nature and is low lying. Its north-western part is considered as phosphatic deficient belt. Soil in Jaunpur, Azamgarh, Mau districts lacks potash. The dry part of this region have soil which is known as reh and usar. It is found in Etawah, Etah, Aligarh, Sitapur, Unnao, Kanpur, Manipuri, Raibareli and Lucknow districts of UP.

### ◉ **Soils of Southern Plateau**

- The southern plateau is known as Baghelkhand and Bundelkhand region. It was made up in the Pre-Cambrian period. It occupies the entire southern zone of the state. Wheat, Sorghum, Bajra, Gram, Arhar are the important crops which are grown in this soil. Red soil, black soil, parua soil, maar soil, raker soil and monta soil are found in this region.
- **Red Soil:** It is found in Mirzapur, Southern part of Allahabad, Sonbhadra, Jhansi, Banda, Chandauli and Hamirpur. It is also found in the water logging area of river Dhasan and Betwa in the form of granite. Deficient in: lime, phosphate, manganese, nitrogen, humus and potash. Colour: Red because of Ferric oxide. The lower layer is reddish yellow or yellow. Wheat, cotton, pulses, tobacco, oilseeds, potato etc are cultivated.

- **Black Soil or Regur Soil:** It is found in the western district and Bundelkhand region of Uttar Pradesh. It is clayey in nature and is generally known as Mar and Kabar. Rich in: Iron, lime, calcium, potassium, aluminum and magnesium. Deficient in: Nitrogen, Phosphorus and organic matter. **Mar** is often called black cotton **soil**. Its varies greatly in colour. It contains small lumps of kankar. **Kabar** range from a rich dark black to light brown.
- **Parua soil:** It is a light coloured sandy soil, found in many forms. It is usually less rich in organic matter, but its finer texture makes it more responsive to manure and irrigation.
- **Raker soil:** It is refuse soil which occurs on sloping ground, where the action of water has tended to denude the earth of all its better qualities.
- **Monta soil:** is found in the form of broken pebbles at the Vindhyan hilly areas. The colour of this soil is red.

## ■ Climate

- ▶ The climate of Uttar Pradesh varies from Temperate in Eastern Uttar Pradesh to extreme in Western UP to Semi Arid in Bundelkhand and Agra zone. Hence, its climate is tropical monsoon in character.
- ▶ Therefore it is extremely difficult to categorize it a particular climatic frame. Nevertheless, summers are very hot and winters are a bit chilly.
- ▶ Precipitation in UP is primarily a summer phenomenon, the Bay of Bengal branch of the Indian Monsoon is the major bearer of rain in most parts of UP. It is the south-west monsoon which brings most of the rain here, although rain due to the western disturbances and north-east monsoon also contribute small quantities towards the overall precipitation of the state.
- ▶ The Himalayan region is moderately cold. Uttar Pradesh mainly experiences three distinct seasons - the cold season from October to February, summer from March to Mid June and the rainy season from March to September.

## ■ Seasons

### ○ Weather in summer

- It is very hot in the summers across the Uttar Pradesh but there is a slight fall in temperature as we move from western UP towards East. Summer season persists from April to August.
- The daytime temperature remains very high and usually touches around 45°C in Western Uttar Pradesh and Agra zone where as it remains around 42°C in Eastern Uttar Pradesh.
- Night are relatively cooler typical of extreme climate and the temperature comes down to as low as 28°C because of the cool breeze. Dew is very common in all the parts of Uttar Pradesh.

### ○ Weather in winter

- Winters in Uttar Pradesh are a lot cooler with day temperature pleasant around 24°C. And nights are chilly with temperature getting as low as 2° to 4°C across the state.
- Earlier Eastern regions were comparatively warmer but due to persistent change in the weather trends, even these areas fall under intense cold wave.
- Cities like Allahabad and Varanasi are continuously seeing mercury dipping to freezing point. The winter falls around Mid-November and continue till February end.

### ○ Weather in monsoon

- As Uttar Pradesh stretches from North India towards Eastern, the rainfall varies considerably. While the South West monsoon is very moderate in Western Uttar Pradesh it rains very heavily in short spells as far as Oudh and Eastern regions are concerned.
- The average annual rainfall varies from 105-110 centimeters in places like Allahabad, Varanasi and Azamgarh to as low as 45-50 centimeters in Agra, Ghaziabad and Meerut. Relative humidity in semi-arid regions such as Agra, Firozabad and Dadri is very high to the point where it becomes uncomfortable.

- The western disturbance too brings a fair amount of rainfall. Approximate average annual rainfall in the state is around 65-70 centimeters.

## ■ Population Composition

- ▶ As per details from Census 2011, Uttar Pradesh has a population of 19.98 Crores, an increase from figure of 16.62 Crore in 2001 census. Total population of Uttar Pradesh as per 2011 census is 199,812,341 of which male and female are 104,480,510 and 95,331,831 respectively.
- ▶ In 2001, total population was 166,197,921 in which males were 87,565,369 while females were 78,632,552. The total population growth in this decade was 20.23 percent while in previous decade it was 25.80 percent.
- ▶ The population of Uttar Pradesh forms 16.50 percent of India in 2011. In 2001, the figure was 16.16 percent.
- ▶ Recently as per Uttar Pradesh census data, 94.70% houses are owned while 4.11% were rented. In all, 64.03% of couples in Uttar Pradesh lived in single family. In 2011, 72.02% of Uttar Pradesh population had access to Banking and Non-Banking Finance Corporation.
- ▶ Only 1.85% of Uttar Pradesh population had internet facility which is likely to improve in 2021 due to Jio. 3.80% of family in Uttar Pradesh owned car while 19.61% owned two wheelers. In few months we will also get details of election data for Uttar Pradesh.
- ▶ The sex ratio also has improved and since the early 21<sup>st</sup> century has exceeded 900 females per 1,000 males.
- ▶ The vast majority of people, including members of all levels of the caste hierarchy, are Hindus. Muslims are the largest religious minority.
- ▶ There also are relatively small groups of Sikhs, Christians, Jains, and Buddhists.
- ▶ Hindi is the official language of the state and the mother tongue of most of the people.
- ▶ Urdu, additionally an official state language is primarily spoken by Muslims. The vernacular Hindustani is widely understood.

## ■ Settlement Patterns

- ▶ The majority of the state's population lives in rural areas. The rural settlements are characterized by compact villages in the western part of the state, groupings of hamlets in the eastern part, and a combination of the two in the central part.
- ▶ A traditional village in Uttar Pradesh is a cluster of mud huts with roofs made of thatch (such as straw) or clay tiles and few amenities of modern living.
- ▶ Villages near the cities, however, are likely to have cement-plastered homes, paved roads, and electricity.
- ▶ Most urban inhabitants live in cities with populations of more than 100,000. Among the largest cities of Uttar Pradesh are Kanpur, Lucknow, Agra, Varanasi, Meerut, and Allahabad.
- ▶ Kanpur, located in the central portion of the state, is the premier industrial city of Uttar Pradesh.
- ▶ Lucknow, the state capital, is about 30 miles (48 km) northeast of Kanpur.
- ▶ Agra, in the western part of the state, is the site of the Taj Mahal, a mausoleum built by the Mughal emperor Shah Jahān (ruled 1628–58) in memory of his wife; it is the most famous tourist attraction in India.
- ▶ Varanasi, the city most sacred to Hindus, is one of the world's oldest continuously inhabited cities.
- ▶ Meerut, northeast of Delhi, is an important centre of transportation, trade, and industry.
- ▶ Allahabad (on the site of the ancient holy city of Prayag), located at the confluence of the Ganges and Yamuna rivers, is another city sacred to Hindus.

## AGRICULTURE

- Agriculture is the mainstay of the state's economy. The chief crops are rice, wheat, and sugarcane.
- Since the late 1960s, with the introduction of high-yielding varieties of seed for wheat and rice, greater availability of fertilizers, and increased use of irrigation, the state has become a major producer of food grains in the country.
- Many of its farmers, however, still suffer from two major constraints: small landholdings and insufficient resources to invest in the technology required for improved production.

### ■ Agro-Climatic Regions of UP

- ▶ **Bhawar and plain, terai plain:** Parts of different district under the zone have been included in concerned agro climatic zone.
- ▶ **Western Plain Zone:** Shaharanpur Muzzaffar nagar, Baghpat
- ▶ **Mid western plain zone:** Bijnor, Moradabad, Rampur, Bareilly, Badaun, Pilibhit and Shahjahanpur (7 district)
- ▶ **Western subtropical zone:** Aligarh, Mathura, Agra, Firozabad, Etah, Mainpuri (6 districts)
- ▶ **Mid plain zone:** Farrukhabad, Kannauj, Etawah, KanpurNagar, KanpurDehat, Unnao, Hardoi, Khiri, Sitapur, Lucknow, Raebareilly, Fatehpur, Pratapgarh and Allahabad (14 districts)
- ▶ **Bundelkhand Zone:** Lalitpur, Jhansi, Jalaun, Hamirpur, Banda and Chitrakott (7 districts)
- ▶ **North Eastern Plain Zone:** Behraich, Balrampur, Gonda, Siddharthnagar, Basti, Maharajganj, Kushinagar and Deoria (9 districts)
- ▶ **Eastern Plain Zone:** Barabanki, Faziabad, Sultanpur, Jaunpur, Azamgarh, Mau, Ballia, Ghazipur, Varanasi and Sant Ravidasnagar (10 districts)
- ▶ **Bindhya Zone:** Mirzapur and Sonbhadra (2 Districts)

### ■ Crop Production

- ▶ Livestock and dairy farming often provide a supplementary source of income.
- ▶ Uttar Pradesh occupies the top position in the production of the following items; Wheat, Barley, Sugarcane, Potato and Lentils.
- ▶ Wheat is grown all over the state except the northern hilly and southern plateau regions. Ganga-Yamuna and Ganga Ghaghara doab are the largest wheat producing areas in which Gorakhpur, Meerut, Bulandshahr, Saharanpur, Agra, Aligarh, Muzaffarnagar, Moradabad, Kanpur, Etawah, Farrukhabad, and Fatehpur are its main producers.
- ▶ Due to high rainfall, the eastern and north-eastern districts of UP have low yield of wheat.
- ▶ Gram is the largest growing crop among all cereal crops in the state. It is grown in those regions where light loam soils and arid soils are found. Banda, Hamirpur, Jhansi, Lalitpur, Jalaun, Mirzapur, Sonebhadra, Kanpur, Fatehpur, Sitapur, Barabanki, Agra and Allahabad are the main districts where the gram is grown.
- ▶ Hamirpur is the largest producer of gram in the state.
- ▶ Mustard is the largest growing crop in the state among all oilseeds crops. UP is the second largest producer of this crop in India. It is either grown independently or with a combination of other crops like peas, wheat and barley. Gonda, Mirzapur, Bahraich, Kanpur, Sonebhadra, Saharanpur, Sitapur, Etah, Meerut, Faizabad, Etawah, Sultanpur, Mathura, Aligarh, and Bulandshahr are the main districts where Mustard is grown.
- ▶ Barley is grown best in sandy and alluvial soils . UP is the second largest producer of barley after Rajasthan. Varanasi, Azamgarh, Jaunpur, ballia, Mau, Ghazipur, Gorakhpur, Etah, Allahabad, and Pratapgarh are the districts where barley is grown.

- ▶ Jute is a fibre crop which is grown in Terai belt and Saryu and Ghaghara doab. Bahraich, Maharajganj, Deoria, Gorakhpur, Gonda, Sitapur, and Lakhimpur, Kheri are the major centres for the cultivation of jute.
- ▶ The following three districts are prominent producers of the mangoes in the state; Lucknow, Saharanpur and Bulandshahr.
- ▶ Pratapgarh and Allahabad are the two biggest producers of the Amla in the Uttar Pradesh.
- ▶ Shahjahanpur and Farrukhabad are the biggest producers of the guava in the state.
- ▶ Barabanki is the largest producer of opium in the Uttar Pradesh. The Ghazipur district of Uttar Pradesh has the only opium factory in the state.
- ▶ The highest litchi production take place in Saharanpur and Meerut districts of Uttar Pradesh.
- ▶ Saharanpur district of Uttar Pradesh is the highest producer of oranges in the state.
- ▶ The most important cash crop of state is sugarcane. Sugarcane of Meerut district is considered to be the best. It is grown in two belts:
  - **Terai belt:** It includes Rampur, Bareilly, Pilibhit, Sitapur, Lakhimpur-Kheri, Gonda, Faizabad, Azamgarh, Mau, Jaunpur, Basti, Ballia, Maharajganj, Deoria, and Gorakhpur districts.
  - **Ganga Yamuna doab:** It includes Meerut, Muzaffarnagar, Ghaziabad, Bulandshahr, Aligarh, Saharanpur, and Moradabad districts. Muzaffarnagar is the largest producer of sugarcane. UP Council of Sugarcane Research was established in 1912 in Shahjahanpur.
- ▶ The major rice producing districts of the state are as follows; Pilibhit, Saharanpur, Maharajganj, Deoria, Gonda, Bahraich, Basti, Rae Bareilly, Ballia, Lucknow, Varanasi and Gorakhpur.
- ▶ Cotton is grown in Saharanpur, Muzaffarnagar, Meerut, Ghaziabad, Bulandshahr, Aligarh, Agra, Firozabad, Etawah, Kanpur, Rampur, Bareilly, Moradabad, Mathura, Manipuri, and Farrukhabad are some districts of the state where cotton is grown.
- ▶ Hamirpur is the largest producer of arhar crop. Varanasi, Jhansi, Lalitpur, Allahabad, Lucknow, Hamirpur are the main districts where arhar pulses are grown.
- ▶ Bajra is mainly produced in Mainpuri, Kanpur, Etawah, Firozabad, Budaun, Mathura, Moradabad, Ghazipur, Farrukhabad and Pratapgarh districts. Aligarh is the largest producer of Bajra crop.
- ▶ Groundnut is grown in the districts of Badaun, Etah, Hardoi, Sitapur, Moradabad, Aligarh on a small scale.
- ▶ Maize is grown in the districts of Ghaziabad, Farrukhabad, Gonda, Jaunpur, Mainpuri, Etah. Mainpuri is the largest producer of maize in the state.
- ▶ Tea is produced in the terai region like Deoria, Siddharthnagar and Pilibhit.
- ▶ Linseed is produced in Mirzapur, Sonbhadra, Prayagraj, Bahraich, Hamirpur, Gonda. Tobacco is produced in Meerut, Saharanpur, Varanasi, Ghaziabad, Mainpuri, and Bulandshahr.

## ■ Fruit Production

- ▶ Due to physical diversity different varieties of fruits are produced in Uttar Pradesh. On regional basis four horticultural zones may be identified in the state.

### ○ Northern Temperate Zone

- This includes hilly parts (Kumaun-Garhwai region) of the state covering the districts of Pauri Garhwal, Chamoli, Dehradun, Tehri Garhwal, Uttarkashi, Almora, Pithoragarh, Nainital and Udham Singh Nagar. Here apples, pears, peaches, cherries, and plums are the main fruits.

### ○ Sub-Tropical Zone

- This incorporates Terai region of the state covering the parts of Saharanpur, Bijnor, Rampur, Bareilly, Pilibhit, Kheri, Bahraich, Gonda, Basti, Gorakhpur and Deoria districts. The region is characterised by 90 cm-125 cm of annual rainfall and hot summer season. It has two sub-regions: (a) northwestern zone growing lichi, peaches, plums and grafted mango, and (b) north-eastern zone with higher rainfall and producing fruits like jackfruit, pine apple, banana, and mango etc.

### ◉ Plain Region or Subtropical Region

- The region enjoys oppressive heat during summer and cold winter. The average annual rainfall ranges between 100 to 125 cm. It is divided into three sub-regions : (a) Central zone growing loquat, grafted mango, citrus fruits, jackfruit, and papaya, etc. (b) eastern zone producing jackfruit, mango, and amla etc; and (c) western zone supplying malta, mozambique, pomplamoose, guava, papaya, mango, jujube etc.

### ◉ Bundelkhand Zone

- In this zone jujube, guava, bel, lemon, custard apple, papaya etc are the main fruits.

## ■ Vegetable and Spices Productions

### ◉ Potato

- Uttar Pradesh is the Indian State with the highest potato production in India, good for 32% of the total production of India. Potato cultivation is likely to increase by 6-8 per cent in Uttar Pradesh as farmers had earned higher income in potato in 2018 than in the previous year.
- Higher potato cultivation is also attributed to rains in October 2018 that has replenished the water bodies and groundwater level in Northern states
- Potato acreage has increased in two major potato growing states of West Bengal and Uttar Pradesh that produce around 55-60 percent of potato output in India. The tuber sowing season begins in October and extends till December in Rabi season.
- It is produced in Firozabad, Agra, Mathura, Kannauj, Kanpur, Meerut, Hapur, Budaun, Rampur, Etawah, Hathras and Mathura.
- Central Potato Research Institute is located in Meerut.
- The state has three agricultural export zones such that Lucknow, Saharanpur, Agra, Agra has been established for potato export. The potato of this zone is known as Taj Brand.

### Aaloo Vikas Neeti-2014

#### Objectives

- ◉ To provide liable rate to potato farmers of their products and for over all development of potato farming, it is needed to decide the policy and all works from seed production and to export needed to be executed in a planned way. Importance of above work should be kept in mind and following objectives under U.P. Potato Development Policy-2014 should be attained:-
  - ▶ Quality seeds needed to be produced for potato farming.
  - ▶ To promote production of quality potato.
  - ▶ To promote advanced technology of potato farming.
  - ▶ To assure the stores for seeds and potato in state.
  - ▶ Promotion of marketing and export of potato out of state.
  - ▶ To promote potato based processing industry establishment.
  - ▶ Skill development and technical transfer of scientific methods to farmers for production.

### ◉ Turmeric and Ginger

- Both are mainly grown in the Bundelkhand region and UP stands first in their production in India.

### ◉ Onion and Garlic

- Both are cultivated in Budaun, Mainpuri, Farrukhabad, Etah, Firozabad, Kanauj, and Etawah.

### ◉ Coriander and Linseed

- Both are produced in Deoria, Gorakhpur, Kushinagar, Azamgarh, Mau, Jaunpur, Sultanpur, Ambedkar Nagar, and Faizabad districts of the state.

### ■ Flowers Production

- ▶ Flowers are mainly cultivated in Lucknow, Prayagraj, Varanasi, Jaunpur and Mirzapur districts of the state.
- ▶ Flowers are used to produce perfumes in the Kannauj district. Lucknow is one of the nine ideal flower producing centers in the country.

#### Palash

- ◉ Palash is the state flower of Uttar Pradesh. It is also believed that Palash is the form of the God of life himself- Agni. It is very easy to care for plant once it establishes. Its beautiful red color flower will enhance the beauty of your landscapes.

### ■ Medical and Scented Plant Production

- ▶ Aloe Vera, Basil, Shatavari, Sarpagandha, Shankhpushpi, Arjun, Khus etc are the main medical and scented plants produced in the state.
- ▶ Mint plant is akin to Mentha plant. Mentha plant is used to extract Mentha oil from its leaves which are used for medicines and other products.
- ▶ It is cultivated in Barabanki, Rampur, Kanauj, Budaun, Jalaun, Auraiya, Etawah and Etah districts.
- ▶ Mentha oil has been established at Barabanki, Budaun, Rampur districts of UP. Thus, the state produces 90% Mentha oil of the country.
- ▶ The state government is going to establish Herbal garden in many districts such as Gorakhpur, Varanasi, Mathura, Ballia, Jhansi, Gonda, Hardoi, Maharajganj under the scheme of Herbal Garden Scheme.

### ■ Betel Production

- ▶ It is produced in Banda, Unnao, Sultanpur, Raebareli, Ballia, Lucknow, Hardoi, Gorakhpur, Azamgarh, Kanpur, Barabanki etc. Betel Training and Research Centre was established in 1981 in Mahoba.
- ▶ Mahoba, Barinanpur of Banda district and Pali region of Lalitpur district are famous for betel production.
- ▶ Mainly varieties of betel are Desawari, Banarasi, Sophiya, Magahi, Kapoori, Meetha and Ramtek.

## UTTAR PRADESH AGRICULTURE POLICY 2013

- ◉ The State Agriculture Policy 2005 for Uttar Pradesh envisaged 4% growth rate in the agriculture sector. To achieve this, the Agriculture Policy revolved around implementation of activities based on seven thrust areas, called Sapt Kranti viz. extension, irrigation and water management, soil health and fertility, seed management, marketing, research and agriculture diversification.

### ■ Vision

- ▶ Transforming the state into a "Granary of the Nation" by ensuring food and nutritional security and to improve the quality of village life with inclusive and sustainable growth.

## ■ Objectives

- ▶ To achieve a growth rate of 5.1% in the agriculture sector.
- ▶ To develop and popularize appropriate eco-friendly farming systems which would improve the soil health as well as farm income.
- ▶ To develop and conserve natural resources for maintaining ecological balance.
- ▶ To increase the income of farmers through agricultural diversification towards high value activities, while retaining the core-competence in area of food and nutritional security.
- ▶ To develop infrastructure facilities in sectors of seeds, fertilizers, pesticides, agriculture implements, extension services, food processing and marketing by promoting private sector involvement across the agricultural supply chain.

## ■ Agricultural Development Schemes in Uttar Pradesh

### ○ Consolidation Programme

- The consolidation scheme was started in Uttar Pradesh in 1954 from Kairana Tehsil of Muzaffarnagar district and Musafirkhana Tehsil of Sultanpur district. After its success the scheme was launched in the entire state in 1958.
- It aims to increase agricultural production, productivity and to uplift the status of farmers in the state.
- This scheme is directly connected with planned Land Reform, Green Revolution, and Village Development.

### ○ Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM)

- To increase production of oilseeds including soybeans in the country, the Central Government has implemented a Centrally Sponsored Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM) in 14 major oilseeds growing States like Andhra Pradesh, Chhattisgarh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh, Uttarakhand etc.
- Under this scheme, financial assistance is provided to farmers for purchase of breeder seed, production of foundation seed, production and distribution of certified seed, distribution of seed minikits, distribution of plant protection chemicals, plant protection equipment, weedicides, supply of micro nutrients & improved agriculture implements, supply of rhizobium culture/ phosphate solubilising bacteria, distribution of gypsum/pyrite/liming/dolomite, distribution of sprinkler sets and water carrying pipes, training, publicity, etc. including free distribution of seed minikits of oilseeds and maize to encourage all types of farmers including small and marginal farmers to grow these crops.

### ○ Kisan Bahi Yojana

- It came into existence in 1992 in order to provide information to 2.50 crore land holders about their land holdings.
- It is a revised form of previous holding passbook scheme.

### ○ Agriculture Development Project

- It was financed by the World Bank which was started in 1998. It is considered as a revolutionary project for the development of agriculture and allied sectors in the state.

### ○ National Agricultural Insurance Scheme

- The Government of India experimented with a comprehensive crop insurance scheme which failed. The Government then introduced in 1999-2000, a new scheme titled "National Agricultural Insurance Scheme" (NAIS) or "Rashtriya Krishi Bima Yojana" (RKBY).



- NAIS envisages coverage of all food crops (cereals and pulses), oilseeds, horticultural and commercial crops. It covers all farmers, both loanees and non-loanees, under the scheme.
- It was introduced in the 71 districts of the state.

### ◉ **Kisan Credit Card**

- It was announced in the Budget speech of 1998-99 to fulfil the financial requirements of the farmers at various stages of farming through institutional credit.
- The model scheme was prepared by the National Bank for Agriculture and Rural Development (NABARD) on the recommendation of V Gupta committee.
- The KCC scheme is being implemented by the all Co-operative banks, Regional Rural Banks and Public Sector Banks throughout the country.
- Scheme covers risk of KCC holders against death or permanent disability resulting from accidents.

## ■ **Farmer Friend Programme**

- ▶ To be pioneer in dissemination of information for the benefit of the farmers & agricultural extension officers.

### ◉ **Mission**

- To provide timely, relevant & reliable information of major agricultural commodities to take better decisions & maximizing farm income to achieve sustainability.

### ◉ **Objectives**

- To develop an integrated commodity information system to gather information from different sources for in - depth analysis.
- To compile the analyzed information & provide updates on major agricultural commodities.
- To facilitate reduction in asymmetric information and increased efficiency across commodity value chain.

### ◉ **Uttar Pradesh Beej Vikas Nigam**

- Its headquarters was located in Uttarakhand, went to most of the state of Uttaranchal. In view of the need for quality seeds in the state, it was decided to set up Uttar Pradesh Seed Development Corporation on June 29, 2001, and on February 15, 2002, the corporation was registered under Section 25 of the Companies Act.
- The corporation is operating its seed production program through about 16,200 seed growers in 74 districts of the state through 39 branch offices under its following 09 regional offices.

### ◉ **Farmer Old Age Pension Scheme**

- It aims to provide social security pension of Rs 500 per month to farmers above the age of 60 years. It was launched by the State Government on 2<sup>nd</sup> October, 2003.
- The pension is given every 6 months and both husband and wife are eligible for this pension.

### ◉ **Gramin Khadya Bank Yojana**

- It is being in operation since 2007 in Mirzapur, Sonbhadra, Chandauli, Ghazipur, Mau, Ballia and 7 districts of Bundelkhand region. Under this scheme, a beneficiary can take 1 quintal free food grains with simple interest of 1 year.

### ◉ **Kisan Hit Yojana**

- It was started in 2007-08 to develop and improve the agricultural land in the state.

## ■ National Agricultural Development Scheme

- ▶ Concerned by the slow growth in the Agriculture and allied sectors, the National Development Council (NDC), in its meeting held on 29<sup>th</sup> May, 2007 resolved that a special Additional Central Assistance Scheme (RKVY) be launched.
- ▶ The NDC resolved that agricultural development strategies must be reoriented to meet the needs of farmers and called upon the Central and State governments to evolve a strategy to rejuvenate agriculture.
- ▶ The NDC reaffirmed its commitment to achieve 4 percent annual growth in the agricultural sector during the 11<sup>th</sup> plan.
- ▶ The Department of Agriculture, in compliance of the above resolution and in consultation with the Planning Commission, has prepared the guidelines for the RKVY scheme, to be known as National Agriculture Development Programme (RKVY).

## ■ Aam Aadmi Bima Yojana

- ▶ It is a website developed by the Revenue Council Uttar Pradesh.
- ▶ The merged scheme is renamed "Aam Admi Bima Yojana" and has come into effect from 01.01.2013.

## ■ National Land Record Modernisation Programme

- ▶ It was launched by the Government of India in August 2008, aimed to modernize management of land records, minimize scope of land/property disputes, enhance transparency in the land records maintenance system, and facilitate moving eventually towards guaranteed conclusive titles to immovable properties in the country.
- ▶ The main objective of the NLRMP is to develop a modern, comprehensive and transparent land records management system in the country with the aim to implement the conclusive land-titling system with title guarantee.

## ■ Canals of Uttar Pradesh that helps in Irrigation

- ▶ The total length of canals is about 50,000 km which provides irrigation to about 70 lakh hectares of the cropped area. Main canal systems are as follows-
  - **Upper Ganga Canal** - It takes off from the Ganga river at Kankhal (Hardwar). The digging of the canal started in 1842 and it was completed in 1854. The main canal is 342 km long, while along with the distributaries it is 5,640 km. The canal passes through a broken country so that at some places it is taken over the bridges and at others below the bridges over its first 32 km. It irrigates about 7 lakh hectares of agricultural land in Kanpur, Etah, Muzaffarpur, Meerut, Mathura, Saharanpur, Bulandshahar, Aligarh, Mainpuri and Farrukhabad districts. It merges with the Lower Ganga canal. The main branches of canal are the Anupshahar, the Deoband, Hathras, and Matta.
  - **Lower Ganga Canal** - It draws its water from the Ganga River at Narora (Bulandshahar). It was completed in 1878. The length of main canal is about 100 km, while with distributaries the length increases up to 6,174 km. It provides irrigation to about 4.8 lakh hectares of agricultural area in Bulandshahar. Aligarh, Etah, Mainpuri, Etawah, Farrukhabad, Kanpur, Fatehpur and Kaushambi districts. Its main branches include: the Etawah, Kanpur and Fatehpur. It joins Upper Ganga canal near Kasganj.
  - **Eastern Yamuna Canal** - It has been taken out from the Yamuna river at Fyzabad (Saharanpur). The canal was originally constructed by the Mughal emperor Shahjehan and was renovated by the British. The main canal with its distributaries is 1,440 km long. It irrigates about 2 lakh hectares of area in Muzaffarnagar, Saharanpur and Meerut districts in Uttar Pradesh and Union territory of Delhi.

- **Agra Canal** - It was dug in 1875. The canal takes its water from the Yamuna River at Okhla. Its total length is about 1,600 km. It irrigates about 1.5 lakh hectares of land in Agra, Mathura and Ghaziabad districts of Uttar Pradesh; Gurgaon district of Haryana; Bharatpur district of Rajasthan; and the union territory of Delhi.
- **Sarda Canal** - It takes off from the Sarda River at Banbasa (Nainital). It was completed in 1926. The length of canal along with distributaries is 12,368 km. It irrigates about 8 lakh hectares of land in the districts of Shahjahanpur, Barabanki, Pilibhit, Sitapur, Kheri, Hardoi, Lucknow, Unnao, Rae Bareilly, Pratapgarh, Sultanpur, and Allahabad districts. Its main branches are Deva, Bisalpur, Nigohi, Kheri, Sitapur, Lucknow and Hardoi. Another canal Sarda Sahayak takes off from the Sardasagar about 20 km below the Sarda canal headworks near Indo-Nepal border and augments the supply in the Sarda Canal. It irrigates about 7.5 lakh hectares of land in Jaunpur, Azamgarh and Ballia districts. The canal was completed during the Third Plan Period.
- **Ramganga Canal** - The canal has been partly completed. It takes its origin from the Ramganga River near Kalagarh (Garhwal). It will irrigate 6.59 lakh hectares of agricultural land in the Rohilkhand Plains (west central Uttar Pradesh).
- **Betwa Canal** - It takes off from river Betwa at Paricha, 24 km away from Jhansi. It was completed in 1886. It irrigates about 83,000 hectares of land in Jhansi, Jalaun and Hamirpur districts. Its main branches are the Hamirpur and the Kathauna branch.
- **Ken Canal** - It is taken out from the Ken River at Gangau (near Panna). Its total length is 640 km. It irrigates about 96,000 hectares of land in Banda (Uttar Pradesh), and Chhatarpur (Madhya Pradesh) districts.
- **Matatila Canal** - Matatila barrage (height 36.5 m; length 713 m) has been constructed across the Betwa river from which two canals (Gursarai and Mandir) are taken out which irrigate about 1.6 lakh hectares of agricultural land in Lalitpur, Jhansi, Hamirpur, Jalaun (Uttar Pradesh) and Bhind, Gwalior, Datia (Madhya Pradesh) districts.
- **Rihand Project Canal** - These canals have been taken out from the Rihand River at Pipri from the barrage of Rihand and are providing irrigation facilities to 16 lakh hectares of land belonging to the eastern Uttar Pradesh and Madhya Pradesh.
- **Dhasan Canal** - It takes off from the Dhasan River (tributary of the Yamuna) and provides irrigation to a part of the Bundelkhand area.
- **Middle Ganga Canal** - It takes off from a barrage over the Ganga River in Bijnor district. The main canal is 115 km long which will be linked to the Upper Ganga Canal. It will irrigate 1.78 lakh hectares of land in the trans-Ganga area of the Upper Ganga Plain.

## ■ Animal Husbandry

- ▶ The livestock population in India has increased by 4.6%, from 512 million in 2012 to nearly 536 million in 2019.
- ▶ The population of cows showed an impressive increase of 18% over the previous census. The numbers of other cattle have marginally increased but cows are accounted for one-fourth count of total livestock population of India.
- ▶ Animal husbandry department of Government of Uttar Pradesh has commenced Kamadhenu', 'Mini-Kamadhenu' and 'Micro-Kamadhenu' for dairy farming. Under these schemes interest free loan and subsidy was given to the entrepreneurs.
- ▶ More than 2000 new dairy farms of 100, 50 and 25 cattle have already been established through these schemes.
- ▶ Uttar Pradesh is also part of the National Dairy Plan (NDP) of the National Dairy Development Board (NDDB).
- ▶ Pradeshik Cooperative Dairy Federation, Uttar Pradesh (PCDF) was formed in 1962 with the aim to develop organized dairying in the State on Cooperative lines PCDF is a cohesive body that successfully does away with the exploitative forces of years to years-the Middlemen. Therefore

a direct link is established between the producer and the ultimate consumer . This Apex Milk Cooperative draws its inherent strength from the farmers committed participation , and injects corporate skills and dynamic professionalism into what is fundamentally a traditional institution.

### Livestock Census 2019

- The poultry population has increased in the country from 729.2 million to 851.81 million which is 16.80 percent of the rise.
- The population of cattle in India has witnessed a very marginal growth as female cattle (cows) are 145.12 million over the 122.98 million in 2012.
- However, a big drop was seen in the population of male cattle from 67.92 million in 2012 to 47.4 million in 2019.
- Uttar Pradesh (UP) has emerged with the highest number of livestock (67.8 million).
- However other states like Rajasthan (56.8 million), Madhya Pradesh (40.6 million) and West Bengal (37.4 million) also seen growth in livestock.
- According to the latest Livestock census, a total of 109.85 million buffalos is there in the country.
- The data-informed that the total number of sheep in the country is 74.26 million, which is 14.1% of growth than its previous number.

## ■ Poultry Farming

- ▶ The state is not among the leading players in terms of Poultry Production, but with such a large population it consumes around 13% of the total poultry meat of the country.
- ▶ The per capita per annum production of broiler meat in UP is estimated at 100 gm whereas per capita consumption is about 300 gm poultry meat. Similarly, egg production is 20 million per day while consumption is 30 million per day.
- ▶ To meet this gap the broilers & eggs are imported from the neighboring states. This offers a tremendous opportunity for further integration and growth in the industry.
- ▶ Though, the modern poultry production has remained largely limited to Southern & Western India, the states like Uttar Pradesh, Haryana and Punjab have seen increased adoption of poultry farming as an alternative source of income for largely agrarian economy.
- ▶ Vehement support by the state government to the poultry sector of Uttar Pradesh (UP) through its Poultry Development Policy has clearly moved UP towards self-sufficiency in the poultry meat and eggs.
- ▶ Through this scheme hundreds of layer and broiler farm of 30,000 and 10,000 birds have already been established. UP is the largest consumer of eggs and chicken meat in India as it consumes 1.7 billion eggs and around half a million tonnes of poultry meat annually.
- ▶ Further with industry moving from fragmented structure to large scale integrators, commercial poultry farming is growing strongly across UP. This is expected to provide further production efficiency and scale to the industry.
- ▶ The profitability for the key players in the industry has been healthy and is expected to remain comfortable over short to medium term though increasing feed prices are putting some pressure on margins.
- ▶ All these factors combined present a rosy picture for investments in the Poultry sector of Uttar Pradesh.

## ■ Fisheries

- ▶ Uttar Pradesh, the fourth largest state of India, produced over 632 thousand metric tons of fish in fiscal year 2018, which was an increase from the previous year.
- ▶ A gradual increase in the production volume was noted over the past years across the northern state.

- ▶ Though Uttar Pradesh is landlocked state, but it is blessed with enormous freshwater aquaculture (1.78408 Lakh ha) and other fisheries resources (5.66 Lakh ha).
- ▶ The state ranks third in the inland fish production after Andhra Pradesh and West Bengal contributing 7.57% in the inland fish production from India.

## ■ Fishery Development Policy- 2013

### ○ Objectives

- Agriculture status to Aquaculture/Fisheries
- Common Fishery Leasing Policy.
- Strengthening of Department of Fisheries, U.P. through Cadre Review and filling of vacant posts.
- Conservation of natural fish wealth in rivers and development of reservoir fishery through river-ranching and seed stocking programs respectively.
- Establishment of a fish outlet at Gomtinagar, Lucknow.
- Establishment of wholesale and retail fish markets and cold chain linkages.
- Quality seed production by establishing State Level Fish Brood Bank, Fish Hatcheries and Nurseries.
- Adoption of advanced technologies like Cage culture, Pen culture and Integrated Fish Farming for aquaculture diversification.
- To promote Fish processing technology and value addition of products for income generation and consumer preference.
- Aquaculture development through aeration technology.

## ■ Forests

- ▶ Forests constitute about 12.8% of the total geographical area of the state. The Himalayan region and the terai and bhabar area in the Gangetic plain have most of the forests. The Vindhyan forests consist mostly of scrub.
- ▶ The districts of Jaunpur, Ghazipur and Ballia have no forest land, while 31 other districts have less forest area.
- ▶ Near the snow line there are forests of rhododendrons and *Betula utilis* (Bhojpatra). Below them are forests of silver fir, spruce, deodar, chir and oak. On the foothills and in the terai-bhabar area grows the sal and gigantic haldu. Along river courses the shisham grows in abundance.
- ▶ The Vindhyan forests have dhak, teak, mahua, salai, chironji and tendu. The hill forests also have a large variety of medicinal herbs. Sal, Chir, Deodar and sain yield building timber and railway sleepers.
- ▶ Chir also yield resin, the chief source of resin and turpentine. Sisso is mostly used for furniture while Khair yields Kattha, which is taken with betel leaves or Pan. Semal and gutel are used as matchwood and Kanju in the plywood industry.
- ▶ Babul provides the principal tanning material of the state. Some of grasses such as baib and bamboo are raw material for the paper industry.
- ▶ Tendu leaves are used in making bidis (Indian cigarettes), and cane is used in baskets and furniture.
- ▶ Corresponding to its variegated topography and climate, the state has a wealth of animal life. Its avifauna is among the richest in the country.
- ▶ Animals that can be found in the jungles of Uttar Pradesh include Tigers, Leopards, Wild Bears, Sloth Bears, Chital, Sambhars, Jackals, Porcupines, Jungle cats, Hares, Squirrels, Monitor Lizards, and Foxes. These all can be seen in the highest mountain ranges.
- ▶ The most common birds include the crow, pigeon, dove, jungle fowl, black partridge, house sparrow, peafowl, blue jay, parakeet, kite, mynah, quail, bulbul, kingfisher and woodpecker.

- ▶ Certain species are found in special habitats. The elephant is confined to the terai and the foothills. The chinkara and the sandgrouse prefer a dry climate, and are native to the Vindhyan forests.
- ▶ The musk deer and the brown bear is found in the higher Himalayas. Among the game birds resident in the state are the snipe, comb duck, grey duck, cotton teal and whistling teal.
- ▶ There are several parks and sanctuaries in Uttar Pradesh that are home to a variety of species that are extinct in other parts of North India, such as the endangered Bengal Florican and successfully reintroduced one-horned Rhinoceros.
- ▶ The splendid and vast hinterlands of this state are alive with exceptionally diverse wildlife just waiting to be discovered. So rich is the population of the avifauna here that the birds not only cluster around lakes but also agricultural fields in various parts of the state.
- ▶ The State has Dudhwa National Park and Series of bird & wildlife sanctuaries which have a wide variety of exotic birds that flock to the lakes, including the black-necked Stork, the stunning Sarus crane, several vulture species and more.

## ■ Uttar Pradesh Forest Policy, 2017

- ▶ According to new forest policy, the forest department has lifted the ban on cutting all the trees except mango, neem, sal and mahua.

### Social Forestry

- This is a major scheme funded by State Government for tree plantation. Plantations is carried out on various types of community land, canals, rail, and on land available on road side to ensure the availability of timber, fuel wood, fodder, small forest produce etc. in rural areas of all the districts in the state. This ensures the availability of raw material for small timber industries for rural people. The scheme is being implemented in the following manner on the basis of financial sources
- Social forestry scheme (General) This scheme is being implemented in all the districts of the state. Industrial pulp wood plantation scheme implemented till the year 2011-12 has come to an end during the year 2012-13. The committed work of the scheme has been included in the social forestry scheme.
- Social forestry - special component sub plan Social forestry scheme is being implemented through the fund received from social welfare department for the welfare of scheduled castes under special component plan. Under this tree plantations work is carried out in scheduled caste abundant regions.
- Social forestry - tribal sub plan Plantation is done on community land in rural areas in tribe abundant regions under social forestry scheme through the fund received from social welfare department for the welfare of scheduled tribes under tribal sub plan.

### Social forestry in urban areas

- In this scheme ornamental and shady trees are planted on the unused land alongside the roads and parks for environment protection and beautification in urban areas.

### Green belt development scheme

- Green belt development has got a priority by the Honorable Chief Minister. In view of this tree plantations is being carried out from the year 2012-13 through the financing from forest corporation and green belt development scheme has been started in the year 2013-14. This is scheme implemented in the entire state.

## **Other state funded schemes implemented by the department**

### **Building construction**

- This scheme is being implemented for the construction of residential houses, departmental offices and non residential buildings for the forest employees working in forests.

### **Vir Abdul Hameed forest, wild life and environment protection award scheme**

- This scheme was started in the year 2012-13 with the aim to recognize the works of individuals/ organizations who has done a commendable work to increase the tree cover, wildlife and environment protection which awakens the spirit of forest and wildlife conservation in the society.

### **Forest research and expansion**

- The task of forest research is executed through the forests promoter, saal region (Bareilly), southern region (Kanpur) and vindhya region (Ram Nagar, Varanasi) under the chief forest conservator (Research) Uttar Pradesh, Kanpur. Departmental plantation is necessary to increase the productivity of tree plantations made by farmers on their private land or by other agencies by making them available high quality seedlings.
- In order to raise high quality seedlings supply of high quality selected seed source is of special importance.

### **Organizing Forest festivals**

- This scheme is being implemented by the entire state. This increases the awareness towards forests and wild life among the public.
- Under this scheme tree plantation and up gradation of forest awareness centers is carried out in every district on the occasion of forest festivals.
- Under this scheme Rs. 20.00 lakhs has been spent during the year 2013-14.

### **Nursery Management Scheme**

- In this scheme nurseries of 8 to 12 feet height are being raised for plantations. This scheme is being implemented in the entire state.

## **AIR POLLUTION IN UTTAR PRADESH**

- In 2017, Uttar Pradesh recorded the most deaths attributable to air pollution, with 260,028 lives lost. Adding to the problem is household air pollution, particularly deadly in less developed states like Uttar Pradesh, Bihar, Madhya Pradesh, and Rajasthan.
- Though the government launched the Pradhan Mantri Ujjwala Yojana scheme in 2016 to discourage the use of polluting cooking fuels, household air pollution claimed the lives of an estimated 481,738 Indians in 2017, according to the Lancet study.
- According to a report released by Climate Agenda that prepared the report 'Air Kills' and which was released in March 2018, "Air pollution is not limited to urban areas. As a result of limiting our efforts to cities, places like Gorakhpur and Mau have become more polluted than cities like Delhi and Lucknow."

- Garbage burning and heavy diesel consumption are polluting the environment in Uttar Pradesh. Diesel gensets, uncontrolled construction activities, dusty roads, chemical fertilisers and pesticides used in agriculture are increasing pollution.
- The report was based on the air quality data of 14 districts – Ballia, Mau, Ghaziabad, Azamgarh, Kanpur, Varanasi, Gorakhpur, Sonbhadra, Allahabad, Mirzapur, Agra, Lucknow, Noida, Moradabad and Shamli.
- According to the latest report released by the World Health Organization, Lucknow is one of the most polluted cities in India. Moreover, 14 of the world's 15 most polluted cities are in India, with Kanpur topping the list of 4300 places.
- In 2011, the CPCB released a National summary report on "Air Quality Monitoring, Emission Inventory and Source Apportionment Study" based on monitoring data from six cities (Delhi, Mumbai, Kanpur, Pune, Chennai and Bangalore). According to the report, in Delhi and Kanpur, the monitoring data at almost all locations and in all seasons were higher than the prescribed standards

## ■ Uttar Pradesh Pollution Board

- ▶ It monitors the level of major source particulate pollutants in the atmosphere. The study also reveals the major cause of air pollution in Lucknow; the areas of Lucknow which are severely under threat of air pollution and studies the tracking mechanisms which have been set up; lack of equipment and the reason behind the same, with some focus on the initiatives for awareness.
- ▶ The prime reasons are: Vehicular emissions and increasing private vehicles on the road, rapid urbanization at the expense of greenery, industries surrounding Lucknow, burning wood for fuel purposes, burning of the garbage etc.

## ■ The Air (Prevention & Control of Pollution) Act, 1981

- ▶ This is an Act to provide for the prevention, control and abatement of air pollution in the country so as to preserve the quality of air. Central and State Boards constituted under section 3 and 4 of the Water (Prevention and Control Pollution) Act, 1974 were deemed also as Central and State Boards for Prevention and Control of Air Pollution.

## ■ Water Pollution

- ▶ According to a CAG report, the water quality of major rivers and water bodies in Uttar Pradesh is not as per the norms and the main reason for this is inadequate sewage and industrial effluent treatment facilities in the state.
- ▶ The BOD (Bio-chemical Oxygen Demand) level and total coliform (which included bacteria that are found in the soil in water that has been influenced by surface water and in human or animal waste) are above the prescribed standard in 12 major rivers and six water bodies for the years 2013-15
- ▶ The water quality of Gomti was also not within the prescribed standards and the main reason for pollution in the river was sewage generation in Lucknow being much higher than the total capacity of the two STPs (Sewage Treatment Plants).
- ▶ As per an analysis report of some rivers, including Hindon, enormous quantities of harmful substances including municipal and industrial effluents entering Hindon from the districts of Saharanpur, Muzaffarnagar, Shamli, Meerut, Baghpat, Ghaziabad and Gautam Budh Nagar, were found, which caused groundwater contamination.
- ▶ The report said the water does not meet the prescribed standard of Primary Water Quality Criteria for Bathing Water as per Environment Protection Rules, 1986.



### **Ground Water Status: An Overview**

- Ground Water Department, Uttar Pradesh has been monitoring the ground water regime since 1975 and has generated a vast database to understand the behaviour of water level in response to recharge to ground water storage or withdrawal from it.
- The state is the largest user of groundwater resources with a gross withdrawal of 5.28 mham. Region wise the maximum withdrawal (ground water draft) is from the western region covering 30 districts, i.e., 2.15 mham with minimum withdrawal from Bundelkhand region i.e. 0.23 mham.
- Almost all prominent urban centres like Lucknow, Kanpur, Meerut, Ghaziabad, Agra, Noida and Varanasi are severely affected by groundwater depletion.

### **The Water (Prevention & Control of Pollution) Act, 1974**

- This Act was enacted for the prevention and control of water pollution and maintaining or restoring of wholesomeness of water. The Central and State Pollution Control Boards have been constituted under section 3 and 4 of the Act respectively.
- The Act was amended in 1978 and 1988 to clarify certain ambiguities and to vest more powers in Pollution Control Board.

\*\*\*\*\*