

# Geography of Telangana



## Index (Topics Covered)

- Physical Geography of Telangana
- Agriculture and allied sectors of Telangana
- Human Geography of Telangana
- Economic Geography of Telangana

By [www.ourstudycircle.in](http://www.ourstudycircle.in)

**Source: Wikipedia & Some other Sites  
including Government Portals**



# **Physical Geography of Telangana**

## Geographical Location of Telangana

### Introduction to Telangana:

The state of Telangana emerged as 29th state in the Indian Union as per the Andhra Pradesh Reorganization Act, 2014 (No. 6 of 2014) of Parliament, which received the assent of the President of India on the 1st March, 2014 and came into existence with effect from 2nd June, 2014. The said Andhra Pradesh Reorganization Act, 2014 was received an amendment called the Andhra Pradesh Reorganization (Amendment) Act, 2014 (No. 19 of 2014) on the 17th July, 2014, transferring certain mandals and villages (327) of Khammam district to residual Andhra Pradesh, enforcing this amendment with effect from 29th May, 2014.

Telangana is a state in the Southern region of India. It has an area of 1,12,077 sq.kms., after the Andhra Pradesh Reorganization (amendment) Act, 2014 (as per Act No. 6 of 2014 it was 1,14,840 kms.), and is the twelfth largest state in terms of both area and the size of the population in the country. Most of it was part of the princely state of Hyderabad, ruled by Nizam of Hyderabad during the British Raj, joining the Union of India in 1948. In 1956, the Hyderabad state was dissolved as part of the linguistic reorganization of states, and the Telugu speaking part of Hyderabad state, known as Telangana, was merged with former Andhra State to form Andhra Pradesh. On 2nd June 2014, Telangana was separated from Andhra Pradesh as a new 29th state of India, with the city of Hyderabad as its capital.

[Join Our Telegram Channel](#)

## Geographical Location of Telangana

The state is bordered by the states of Maharashtra, Chhattisgarh to the North, Karnataka to the west, and Andhra Pradesh to the south, east and north east. The major cities in Telangana state include Hyderabad, Warangal, Mahbubnagar, Karimnagar, Nizamabad, and Khammam. The State is strategically located in the Deccan plateau in a semi-arid region. The climate is predominantly hot and dry.

### Demography

#### Geographical Location of Telangana:

Telangana has an area of 1,14,800 square kilometres and it is drained by two major rivers, Krishna and Godavari. The river Godavari flows on the north, whereas Krishna flows in the south. Apart from these rivers, there are other small rivers such as Bhima, Dindi, Manjeera, Manair, Kinnerasani, Moosi etc, which also flow through Telangana. 45% of the forest area of Andhra Pradesh is in the state of Telangana. It also has a vast coal deposit and around 20% of India's coal deposit lies in Telangana. The coal produced from this region is supplied to the states in south India.

Geographical Location of Telangana lies between  $15^{\circ}46'$  and  $19^{\circ}47'$  N latitude and  $77^{\circ} 16'$  and  $81^{\circ} 43'E$  longitude, and is bordered by the states of Maharashtra in the north and north-west, Karnataka in the west, Chhattisgarh in the north-east and Andhra Pradesh in the south and east. The average annual rainfall is about 906 mm, 80% of which is received from the Southwest monsoon. The State is strategically located in the Deccan Plateau in a semi-arid zone. The climate is predominately hot and dry.

## Geographical Location of Telangana

### Telangana Plateau of Geographical Location of Telangana:

Telangana Plateau, Telangana also spelled Telangana, plateau in western Andhra Pradesh state, southeastern India. Comprising the northeastern part of the Deccan plateau, the Telangana Plateau has an area of about 57,370 square miles (148,000 square km), a north-south length of about 480 miles (770 km), and an east-west width of about 320 miles (515 km). Mentioned in one of the Mauryan emperor Ashoka's edicts, the region was successively ruled by the Satavahanas,

The plateau is drained by the Godavari River taking a southeasterly course; by the Krishna River, which divides the peneplain into two regions; and by the Penneru River flowing in a northerly direction. The plateau's forests are moist deciduous, dry deciduous, and tropical thorn.

### LAND UTILISATION

The total geographical area of the State is 112.07 lakh hectares, of which the area under forest cover is 27.43 lakh hectares, constituting 23.89% of the land. About 43.20% area is under cultivation (49.61 lakh hectares), 8.36% is current fallow lands (9.60 lakh hectares), 7.79% of land is put to non-agricultural uses (8.95 lakh hectares), 5.36% is barren and uncultivable (6.15 lakh hectares) and 6.24% falls under other fallows (7.17 lakh hectares).

## Geographical Location of Telangana

The remaining 5.16% is under culturable waste, permanent pastures and other grazing lands, and land under miscellaneous tree crops and groves are not included in the net area sown (5.93 lakh hectares).

**POPULATION:** The Government of India, in exercise of powers conferred under the provisions of the Census Act, 1948, conducting the population census across the country once in a decade and releasing the results in different phases. Accordingly, the Government of India has conducted the population census in the year 2011 and released the final results, up to the village level, in different classifications. An attempt is made in this chapter to present the results of the population census, 2011 conducted in Telangana State, excluding (327) revenue villages that were transferred to the state of Andhra Pradesh as per the Andhra Pradesh Reorganization (Amendment) Act, 2014 (No. 19 of 2014) along with certain comparisons with that of the earlier censuses. Accordingly, the geographical area of the Telangana State is 1,12,077 Sq. Kms. And population is 350.04 lakhs consisting of 176.12 Lakh males and 173.92 Lakh females, is the twelfth largest state in terms of both area and size of population in union of India. The sex ratio is being 988 in the state.

## Geographical Location of Telangana

**GROWTH OF POPULATION:** The people of the state are predominantly residing in rural areas with 61.12% and the rest of 38.88% are residing in urban areas. The overall growth of total population during the decade 2001 to 2011 is 13.58%, whereas it was 18.77% in the preceding decade. The growth of the population in urban areas has been witnessing a significant increase. Urban population in the State grew by 38.12% during the decade 2001 to 2011 as compared with 25.13% in the preceding decade. In sharp contrast, rural population in testate grew by a modest 2.13% as per the 2011 census, which is much higher than the United Nations estimates of world population growth at 1.23%. Around 30% of total urban population is residing in the capital city of Hyderabad alone.

**SEX RATIO:** The sex ratio is defined as the number of females per 1,000 males. This ratio for testate is 988 according to 2011 Census. One distinguishing feature is that the sex ratio in the districts of Nizamabad, Adilabad, Karimnagar and Khammam is over 1,000. The sex ratio has been witnessing an improvement in the State from 967 in 1991 to 971 in 2001 and further to 988 in 2011. Despite a favorable sex ratio of the total population, the sex ratio of children in the age group of 0-6 years is declined from 957 in 2001 to 932 in 2011. The sex ratio of the SC population at 1,008 in 2011 is much higher than testate average of 988 in all districts, except Ranga Reddy, Hyderabad and Mahbubnagar districts.

## Geographical Location of Telangana

The sex ratio of ST population at 977 is marginally lower than the state average of 988, but it is higher in Adilabad, Karimnagar, Nizamabad and Khammam districts.

### **DENSITY OF POPULATION:**

The density of population is defined, in general, as average number of persons residing per square kilometer of area. The density of population in the State ranges from 170 to 18,172 per square kilometer. Adilabad district has the lowest density of 170 per sq. kilometer and Hyderabad district with highest density of 18,172 per sq.kilometer. The districts of Adilabad, Khammam and Mahbubnagar have lower density of population with 170, 197 and 220 per sq. kilometer respectively, as compared to the State average of 312 per sq. kilometer.

### **LITERACY RATE:**

According to the Census of India, the literacy rate is defined as the total percentage of the population of an area at a particular time, aged seven years or above who can read and write with understanding. The literacy rate of the State as per 2011 census is 66.54%. Male literacy and female literacy are 75.04% and 57.99%, respectively. Hyderabad district is highest with 83.25% and Mahbubnagar district at lowest with 55.04%, the same is depicted in the following graph.



## Relief and Structure of Telangana

### Introduction:

Telangana, also spelled Telengana or Telingana, constituent state of south-central India. It is bordered by the states of Maharashtra to the north, Chhattisgarh and Odisha to the northeast, Andhra Pradesh to the southeast and south, and Karnataka to the west. The area of what is now Telangana constituted the north-central and northeastern portions of Andhra Pradesh for almost six decades, but on June 2, 2014, that territory was calved off to form a separate state. The capital of both Telangana and Andhra Pradesh is Hyderabad, in west-central Telangana.

### Telangana Plateau :

Telangana Plateau, Telengana also spelled Telangana, plateau in western Andhra Pradesh state, southeastern India. Comprising the northeastern part of the Deccan plateau, the Telangana Plateau has an area of about 57,370 square miles (148,000 square km), a north-south length of about 480 miles (770 km), and an east-west width of about 320 miles (515 km). Mentioned in one of the Mauryan emperor Ashoka's edicts, the region was successively ruled by the Satavahanas,

The plateau is drained by the Godavari River taking a southeasterly course; by the Krishna River, which divides the peneplain into two regions; and by the Penneru River flowing in a northerly direction. The plateau's forests are moist deciduous, dry deciduous, and tropical thorn.

**Features of Telangana:** Relief and Structure of Telangana Telangana is situated on the Deccan Plateau in the Indian Peninsula. The region is drained by two major rivers Godavari and River Krishna, but most of the land is arid. Telangana is also drained by several minor rivers such as the Bhima, the Maner, the Manjira and the Musi. The annual rainfall is between 900 and 1500 mm in northern Telangana and 700 to 900 mm in southern Telangana, from the southwest monsoons. Various soil types abound, including chalks, red sandy soils, dubbas, deep red loamy soils, and very deep black cotton soils that facilitate planting mangoes, oranges and flowers.

**Geography of Telangana:** Telangana has an area of 1,14,800 square kilometers and it is drained by two major rivers, Krishna and Godavari. The river Godavari flows on the north, whereas Krishna flows in the south. Apart from these rivers, there are other small rivers such as Bhima, Dindi, Manjeera, Manair, Kinnerasani, Moosi etc, which also flow through Telangana. 45% of the forest area of Andhra Pradesh is in the state of Telangana. It also has a vast coal deposit and around 20% of India's coal deposit lies in Telangana. The coal produced from this region is supplied to the states in south India. Telangana lies between 15°46' and 19°47' N latitude and 77° 16' and 81° 43' E longitude, and is bordered by the states of Maharashtra in the north and north-west, Karnataka in the west, Chhattisgarh in the north-east and Andhra Pradesh in the south and east.

The average annual rainfall is about 906 mm, 80% of which is received from the Southwest monsoon. The State is strategically located in the Deccan Plateau in a semi-arid zone. The climate is predominately hot and dry.

### **Relief and Structure of Telangana:**

The relief features of a region in Geography means the high altitude areas, mountains, peaks, valleys, low lying areas etc. These relief features divide the main lands into living areas, forests, islands, waste lands, river plains etc. The telangana is on the Deccan plateau. It is on the central stretch of the Eastern seaboard of the Indian Peninsula. Major Rivers Godavari and Krishna flow through the state. The state is divided into two main regions. There are ghats and peneplains. There are many low depressions in the land. There are thick forest regions in the state. There are some Eastern ghats that border the state.

There are many small local reliefs in Telangana of height about 300 m, small summit areas and having steep slopes. There are not any notable valleys in the region. The altitudes of lands (hill tops) in the state range from 500 m to 800 m.

It is situated on the Deccan plateau, Telangana state occupies 1.14 lakh sq km on the central stretch of the eastern seaboard of the Indian peninsula.

Despite the region drained by two major rivers – 69% of Krishna's catchment areas and 79% of Godavari – most of the land is dry and arid. There are also minor rivers like Bhima, Manjira and Musi that crisscross the state comprising 10 districts in all.

The annual rainfall ranges from 900 to 1,500 mm in northern Telangana and 700 to 900 mm in southern Telangana, mostly getting the precipitation from the southwest monsoon.

Various soil types are found in Telangana – chalkas, red sandy soils, dubbas, deep red loamy soils, and very deep b.c.soils – that facilitate planting mangoes, oranges and flowers.

It is noteworthy that 45% of forest cover of undivided Andhra is now located in the five districts of Telangana.

Much of its area is occupied by the Telangana plateau in the north and the Golconda plateau in the south and is composed of gneissic rock.

The plateau's average elevation is about 1,600 feet with its peaks in the west and southwest and gradually sloping down towards the east and northeast, where it meets the disjointed ridges of the Eastern Ghats ranges.

## Climate in Telangana

The summer begins from March to end in June, followed by a period of tropical rains from July to September; and finally, winter occurs from October to February.

Summers are very warm to extreme hot and dry, with temperatures often crossing 42-43 degree Celsius.

The annual precipitation mostly from the rainy southwest monsoon winds varies across the state. It averages about 35 inches (900 mm) per year, although the annual total often varies considerably from the average and can be as little as 20 inches (500 mm) in drier areas.

The average minimum temperatures in Hyderabad reach about 15 degree Celsius in January and February, while in the elevated areas it falls between 10 and 12 degree Celsius in the winter.

## Climate of Telangana

### Introduction to Telangana:

In 2014 Telangana became the 29th state of India. There was a lot of turmoil in the state of Andhra Pradesh for a very long time, and it was led by K Chandrashekhar Rao, who wanted a separate statehood for Telangana since 2001. It took nearly 50 years for Telangana to get freedom and the struggle was referred to as the Telangana Movement. This marked both as a beginning as well as an end. It is the end of a prolonged struggle which lasted over six decades and it was also the beginning of a process of creating a new identity for them.

### Geography of Telangana:

Telangana has an area of 1,14,800 square kilometres and it is drained by two major rivers, Krishna and Godavari. The river Godavari flows on the north, whereas Krishna flows in the south. Apart from these rivers, there are other small rivers such as Bhima, Dindi, Manjeera, Manair, Kinnerasani, Moosi etc, which also flow through Telangana. 45% of the forest area of Andhra Pradesh is in the state of Telangana. It also has a vast coal deposit and around 20% of India's coal deposit lies in Telangana. The coal produced from this region is supplied to the states in south India.

[Join Our Telegram Channel](#)

## **Climate of Telangana and Temperature:**

Telangana is a semi-arid zone and has a predominantly hot and dry climate. The areas covered by the Deccan Plateau are characterized by hot summers with relatively mild winters. In Telangana region, the mean maximum temperature varies between 40 C and 43 C in May and the mean minimum temperature is 13C to 17C in December and January. The minimum temperature falls rapidly after October, and less than 10C has also been recorded on certain days.

## **Rainfall:**

The State receives rainfall from South-West (June – September) and North – East (October–November) monsoons; however, there is large variation in the distribution of rainfall. Telanganagenerally receives modest rainfall. The average annual rainfall in the state is about 906 mm, 80 percent of which is received from the South-West monsoon (June-September).

## **Humidity**

In Telangana, humidity is as high as 80% during monsoon months (July-September). In the dry months of March, April and May, humidity is generally low with an average of 25 to 30%.

**Heavy Rains:** Due to low pressure system which developed in West Central Bay of Bengal and adjoining areas there were torrential and incessant rains in the districts of Mahbubnagar and Nalgonda in the year 2009, 2012 and 2013.

**Floods:** Floods by nature depend on several factors; one being incessant rains; rains in a short period of time crippling natural drainage. However, other factors such as nature of the collecting basin, nature of the streams, type of soil, natural and man-made vegetation, amount of rainfall, obstruction to natural drainage etc. determine the type and extent of floods. Khammam district in Telangana region is most prone to monsoon floods.

**Droughts :** The Central Water Commission defines drought as a situation occurring when the annual rainfall is less than 75% of the normal (defined over 30 years average). Drought is a normal, recurrent feature of Climate of Telangana. It occurs in virtually all climatic zones, but its characteristics vary significantly from one region to another. The table 7 & 8 shows district wise total no. of mandals affected from droughts in year 1995- 96 to 2011-12. It shows that Telanganahas historically been prone to drought conditions especially in Rangareddy, Mahabubnagar and Nalgonda districts. Climate is projected to increase drought occurrence in the districts like Nalgonda and Mahabubnagar which would impact not only water resources but also have a cascading effect on other dependent sectors.



Increased drought conditions can also severely affect agricultural and pastoral livelihoods and increase vulnerability and risks for farmers, and people depending on such livelihoods. For farmers who are strongly dependent on rainfall for agricultural activities, crop failure caused by drought can lead to household food insecurity. For pastoralists and agro – pastoralists whose livelihoods and food security depend on livestock, drought conditions can cause malnutrition or disease in livestock because of insufficient fodder.

**Heat Waves of Climate of Telangana:** A heat wave is a climatologically extreme event involving abnormally higher temperature relative to normal<sup>15</sup>during the Summer i.e. the months of April June. During this period the temperatures rise considerably, sometimes touching 47°C in May month in districts like Khammam, Nizamabad, Nalgonda, Karimnagar and Warangal. During the year 1986-1993, the heat waves were mainly of moderate nature with maximum duration of seven days. The highest maximum temperature of 47C was recorded at Nalgonda and Rama Gundam on 11thMay,1998.From 1994 onwards, the frequency of severe heat waves and the duration of heat wave spells have increased significantly. In 1997 (18th May to 5thJune) and 1998 (23rdMay to 10thJune). State Action Plan on Climate Change for Telangana State<sup>32</sup>Environment Protection Training & Research Institute the duration of moderate to severe heat wave spells had extended up to 19days.

Since Heat wave conditions prevail in several parts of the state during summer season, deaths due to sunstroke occur every year. In spite of various measures taken by Government, 541 deaths due to sunstroke had been reported in the year 2015 (as on 30th May, 2015). The maximum deaths were recorded in Nalgonda, Khammam, Karimnagar and Mahbubnagar districts, where the temperatures have crossed 45° C.

## **EFFECTS OF CLIMATE CHANGE ON Climate of Telangana**

### **Issues-**

- Higher vulnerability of the State towards climate change.
- The river basins are prone to climate change impacts due to changing precipitation and temperature patterns.
- Industrial hubs are prone to climate change impacts due to unscientific construction and water and electricity scarcity.
- Majority of rural and urban population is not aware about the climate change issues and impacts
- Lack of Climate Change knowledge center in the State

## Soil of Telangana

### INTRODUCTION

Soil is an important matter for cultivation of crops. Soil supplies all the important factors for the growth of the crop plants. The yielding potential is largely dependent on the soil in which the crops are grown. The type and properties of soil directly affect the crop growth and yield, hence management and conservation of soil should be done with interest.

Climate also is a factor that affects the crop growth and productivity. As we all know Indian agriculture is largely dependent on climatic conditions. The changing weather scenario affect the yield and quality of crop plants and one should find the ways to tackle the problem of such weather effects

### Types of Soil :

Soil types are classified according to many more factors. They are classified on the basis of colour, depth, pH, productivity, texture and process of formation.

### **Soil types according to depth are as follows:**

- 1) Shallow Soil – Soil depth less than 22.5cm. Only shallow rooted crops are grown in such soil, e.g. Paddy, Nagli.
- 2) Medium deep soil – Soil depth is 22.5 to 45cm. Crops with medium deep roots are grown in this type of soil e.g. Sugar cane, Banana, Gram.
- 3) Deep soil – Soil depth is more than 45cm. Crops with long and deep roots are grown in this type a soil e.g. Mango, coconut.

## Major types of soils in India

The main types of soil in India are as follows:

1. Red soils
2. Laterites and lateritic soil
3. Black soil
4. Alluvial soils
5. Forest & hill soils
6. Peaty and marshy soils

### 1) Red Soils:

Red soils have two broad classes:

- a) Red loam with cloddy structure and allow content of concretionary materials; and
- b) Red earths with loose, Permeable top soil and a high content of secondary concretions. Generally these soils are light textured with porous and friable structure and there is absence of lime Kankar and free carbonates. They have neutral to acidic reaction and are deficient in nitrogen humus, phosphoric acid and lime.

## 2) Laterites and Lateritic soils

These soils are red to reddish yellow in colour and low in N, P, K, lime and magnesia. These soils are formed in-situ under conditions of high rainfall with alternation dry and wet periods. On account of heavy rainfall there is an excessive leaching of soil colloids and silica hence the soils are porous.

## 3) Black soils

These are mostly clay soils and form deep cracks during dry season. An accumulation of lime is generally noticed of varying depths. They are popularly known as "Black cotton soils" because of their dark brown colour and suitability for growing cotton. These are also known as Indian regurs. These soils are deficient in nitrogen, phosphoric acid and organic matter but rich in calcium, potash and magnesium.

## 4) Alluvial soils

These soils occur along rivers and represent the soil materials that have been deposited by the rivers during flood. Usually they are very productive soils but many are deficient in nitrogen, humus and phosphorus.

## 5) Forest and hill soils

These soils occur at high elevations as well as at low elevations, where the rainfall is sufficient to support trees. These soils are very shallow, steep, stony, and infertile for the production of field crops. However, they serve a very useful purpose by supplying forest product such as timber and fuel.

### **6) Desert soils**

These are mostly sandy soils that occur in the low rainfall track. They are well supplied with soluble salts but are low in nitrogen and organic matter and have a high pH value. These are quite productive. These are often subjected to wind erosion.

### **7) Saline & Alkaline soils**

These soils occur in areas having a little more rainfall than the areas of desert soils. They show white incrustation of salts of calcium & Magnesium and sodium on the surface. These are poor in drainage and are infertile.

### **8) Peaty and Marshy soils**

These types of soils are found in Kerala, coastal track of Orissa, Sunder ban area of W.B. When the vegetation growing in such wet places dies, it decomposes very slowly due to excessive wetness of soils and after several hundreds of year a layer of partly decayed organic matter accumulates on the surface, giving rise to such peaty and marshy soils. These are black coloured, heavy and highly acidic soils. When properly drained and fertilized, these soils produce good crops of rice.

Telangana is a newly formed state which is bifurcated from Andhra Pradesh on June 2, 2013. Its area of 114,840 km<sup>2</sup> makes it the 12th largest state in the country. The state consist of various types of soil.

## 1.Red soils:

- Most of the part in Telangana state is covered by Red soils which is about 48%.
- These soils formed due to weathering of ancient metamorphic rocks.
- Red color is due to presence of iron oxides.
- These soils cover large part in Mahabubnagar, Nalgonda, Karimnagar, Khammam, Rangareddy, Nizamabad districts and very less in Adilabad district.

## 2.Black soils

- These soils accounts for 25% of total area of Telanagan. These are made up of volcanic rocks and lava flow. These are also called as regur soils.
- These soils are very much suitable for Cotton crop.
- The black color is due to fe, mg oxides. Water holding capacity of these soils is high.
- You can found most of the parts in Adilabad, Rangareddy, Nizama bad districts and less parts of KNR, WGL, MBN districts.

## 3.Laterite soils

- Covers 7% of the area. These soils formed due to intense leaching where high temperature and high rainfall occurs. These soils are sticky in nature.
- Found in Medak and Khammam districts.

#### 4. Alluvial soils

- These soils are formed by the deposition of sediments by rivers. These are rich in humas and very fertile. You can see soils present at river banks.

### Vegetation of Telangana

**Introduction:** Telangana is situated largely in an upland region of the Deccan (peninsular India). Much of its surface area is occupied by the Telangana Plateau in the north and the Golconda Plateau in the south and is composed of gneissic rock (gneiss being a foliated rock formed within Earth's interior under conditions of heat and pressure). The average elevation of the plateau area is about 1,600 feet (500 metres), higher in the west and southwest and sloping downward toward the east and northeast, where it meets the discontinuous line of the Eastern Ghats ranges. Drainage is dominated by the basins of the Godavari River in the north and the Krishna River in the south. As a result of erosion, the topography of the plateau region consists of graded valleys with red sandy soil and isolated hills. Black soil is also found in certain parts of the area.

Vegetation of Telangana Telangana is the 29th state of India, formed on the 2nd of June 2014. The state has an area of 1,12,077 Sq. Km. and has a population of 3,50,03,674. The Telangana region was part of the Hyderabad state from Sept 17th 1948 to Nov 1st 1956, until it was merged with Andhra state to form the Andhra Pradesh state.



After decades of movement for a separate State, Telangana was created by passing the AP State Reorganization Bill in both houses of Parliament. Telangana is surrounded by Maharashtra and Chhattisgarh in the North, Karnataka in the West and Andhra Pradesh in the South and East directions. Major cities of the state include Hyderabad, Warangal, Nizamabad and Karimnagar.

Telangana has three seasons: summer, from March to June; a period of tropical rains from July to September; and winter, from October to February. Summers are warm to hot and dry, with temperatures often nearing or exceeding 100 °F (38 °C). Annual precipitation, which derives largely from the rainy southwest monsoon winds, varies somewhat across the state. It averages about 35 inches (900 mm) per year, although the annual total often varies considerably from the average and can be as little as 20 inches (500 mm) in drier areas. Average minimum temperatures in Hyderabad reach about 60 °F (15 °C) in January and February and usually read in the low 50s F (about 10 to 12 °C) at higher elevations.

### **Vegetation of Telangana:**

Thorny vegetation covers the scattered hills of the plateau areas, while dense woodlands are found in the northeast along and near the Godavari River. The forests, covering about one-fourth of the land area, consist of both moist deciduous and dry savanna vegetation; teak, rosewood, wild fruit trees, and bamboo are plentiful.

Elsewhere in the state, neem (which produces an aromatic oil), banyan, mango, and pipal (or Bo; *Ficus religiosa*) are among the common trees.

The type of forests met within Telangana are Tropical moist deciduous forests, Southern dry deciduous forests, Northern mixed dry deciduous forests, Dry savannah forests and Tropical dry evergreen scrub.

Animal life includes tigers, blackbucks, hyenas, sloth bears, gaurs, and chital, which abound in the hills and forest areas. There are also hundreds of species of birds, including flamingos and pelicans. Telangana is home to some two dozen national parks, wildlife sanctuaries, and protected areas, including two tiger reserves that adjoin similar facilities in neighbouring states.

According to this study, the 'Flora of Telangana State' comprises 1911 taxa of flowering plants distributed within 893 genera and 162 families.

### **VEGETATION TYPES of Vegetation of Telangana:**

As per the classification of Champion and Seth(1968), the vegetation of the state of Telangana can be broadly classified into

- 1.Tropical semi-evergreen forests,
- 2.Tropical moist deciduous forests,
- 3.Dry deciduous forests,
- 4.Northern mixed dry deciduous forests  
(Red sanders forests),

5. Dry savannah forests,
6. Tropical dry evergreen forests,
7. Tropical dry evergreen scrub,
8. Coastal vegetation,
9. Aquatic vegetation.

## **Wild Life and Ecotourism of Telangana**

### **Introduction:**

Telangana is a state in the Southern region of India. It has an area of 1,12,077 sq.kms., after the Andhra Pradesh Reorganization (amendment) Act, 2014 (as per Act No. 6 of 2014 it was 1,14,840 kms.), and is the twelfth largest state in terms of both area and the size of the population in the country. Most of it was part of the princely state of Hyderabad, ruled by Nizam of Hyderabad during the British Raj, joining the Union of India in 1948. In 1956, the Hyderabad state was dissolved as part of the linguistic reorganization of states, and the Telugu speaking part of Hyderabad state, known as Telangana, was merged with former Andhra State to form Andhra Pradesh. On 2nd June 2014, Telangana was separated from Andhra Pradesh as a new 29th state of India, with the city of Hyderabad as its capital.

The state is bordered by the states of Maharashtra, Chhattisgarh to the North, Karnataka to the west, and Andhra Pradesh to the south, east and north east. The major cities in Telangana state include Hyderabad, Warangal, Mahbubnagar, Karimnagar, Nizamabad, and Khammam. The State is strategically located in the Deccan plateau in a semi-arid region. The climate is predominantly hot and dry.

## **Wild Life and Ecotourism of Telangana**

Telangana has rich forests and wild life sanctuaries, which provide scope for eco-tourism Wild Life tourism that cover Alisagar Deer park in Nizamabad, the Eturunagaram Sanctuary and Pakhal Wildlife Sanctuary in Warangal, Kawal Wildlife Sanctuary, Jannaram, Pranahitha Wildlife Sanctuary and Sivaram Wildlife Sanctuary in Adilabad, Mahavir Harina Vanasthali National Park, Vansthalipuram and Nehru Zoological park in Hyderabad, Manjira Bird Sanctuary in Sangareddy, and Pocharam Sanctuary in Medak, Shamirpet Deer Park in Rangareddy.

### **Tourism**

The tourism in the present day, has become increasingly significant and organized (industry) as more and more people with increased disposable income, higher propensity to spend and changing social mores trot cities and countries due to variety of reasons. Along with the evolution of tourism, its definition has also formalized over the years and in the present parlance a visitor is considered to be a traveler taking a trip to a main destination outside their usual environment, for less than a year, for any main purpose (business, leisure or other personal purpose) other than to be employed by a resident entity in the country or place visited A visitor (domestic, inbound or outbound) is classified as a tourist (or over night visitor), if his/her trip includes an overnight stay, or as a same-day visitor (or excursionist) otherwise. A traveler on the other hand is someone who moves between different geographic locations, for any purpose and any duration.

The visitor is a particular type of traveler and consequently tourism is a subset of travel. However, "Tourism" refers to all activities of visitors, including both "tourists (over-night visitors)" and "same-day visitors". In the context of Telangana, its culture combines cultural customs from Persian traditions embedded during Moghuls, QutubShah is and Nizams rule with prominent and predominantly south Indian traditions and customs. The State has a rich tradition in classical music. It has a rich painting and folk arts such as Burrakatha, shadow puppet show, and Perini Shiva Tandavam, GusadiDance, Kolatam etc. Telangana has a variety of tourist attractions including historical places, monuments, forts, waterfalls, forests and temples. Lakhs of tourists, including foreign tourists visit these tourist attractions every year and carrying their experiences, customs and traditions of Indian heritage, sweet memories to their native states or countries

### **Rural Tourism**

Telangana has a tremendous potential for Rural Tourism and is a fascinating canvas of myriad colors, cultures and customs. Handicrafts represent, perhaps, the oldest traditions of living culture and Telangana has some of the richest sources of handicrafts

## Heritage Tourism

Telangana is a historic land dotted with a number of forts, which have a potential to be developed into classic heritage tourism sites. Some famous forts, where Tourism Department is taking up projects to develop amenities for tourists are Golconda Fort, Medak Fort, Khammam Fort, Nizamabad Fort, Elagandula Fort, Karimnagar and Bhongir Fort, Nalgonda. Warangal Fort and Golconda Fort also host Sound and Light shows which take us back to a magnificent past. More shows of this kind will highlight the rich heritage of Telangana. Telangana State Tourism Development Corporation (TSTDC) organizes all the above tourist packages and also connects the neighboring States. TSTDC also maintains Haritha Hotel chains, wayside amenities, river cruises and water fleet in different locations. Any trip to Telangana State is incomplete without a taste of its cuisine, including the famous Hyderabad Biryani, Qubani-ka-Meetha, Haleem, Osmania Biscuits and Irani Chai.

## Natural hazards and other related aspects of Telangana

### Natural hazards and other related aspects of Telangana

- The natural disasters directly impact economies, agriculture, food security, water, sanitation, the environment and health each year.
- Therefore it is one of the single largest concerns for most of the developing nations.
- Different natural hazards because varying levels of physical damage to infrastructure and agriculture with implications for their indirect and secondary impacts.
- Drought causes heavy Crop and Livestock losses over wide areas of land but typically leave infrastructure and productive capacity largely unaffected.
- Floods and Cyclones cause extensive whereas damage to both infrastructure and agriculture, depending on their timing relative to the agricultural cycle.
- While earthquakes have little impact on standing crops excluding localized losses but can cause wide spread devastation of infrastructure and other productive capacity over relatively large areas.
- The precise cost of the disaster in terms of loss of lives, property, loss of development opportunities, etc. cannot be clearly assessed, counted or scaled.

- The costs of disaster are clearly inequitable, falling heavily only on the few. Disasters result not only in loss of shelter but also create hardships, lack of food availability, and temporary loss of livelihood and disrupt socio-economic activities.
- Some of the losses may be redeemable and compensated for through disaster relief and insurance.
- However, apart from economic dimension, such disturbances have their psychological and social dimensions as well, which need to be studied, and documented besides developing.

### Types of Disasters

- Due to the increasing frequency of natural and man-made disasters and their severe impact on the individuals, society, economy, natural resources and environment, Government of India constituted a **High Powered Committee (HPC) on Disaster Management in August 1999** to prepare comprehensive plans for National, State and District levels.
- The HPC has rightly stressed on the need for a comprehensive and holistic approach towards dealing with all kinds of disasters.
- From a compartmentalized response oriented approach, a coordinated, holistic and participatory approach has been recommended.
- HPC identified thirty one disasters in the country.
- These disasters have been categorized into following five sub-groups depending on generic (origin) considerations and various departments/ ministries dealing with various aspects:



- Water and Climate Related Disasters –
- Floods and Drainage Management,
- Cyclones,
- Tornadoes and Hurricanes,
- Hailstorm,
- Cloud Burst,
- Heat Wave and Cold Wave,
- Snow Avalanches,
- Droughts,
- Sea Erosion
- Thunder and Lightning.
- Geology Related Disasters
- Landslides and Mudflows,
- Earthquakes,
- Dam Failures/ Dam Bursts
- Mine Fires
- Chemical , Industrial & Nuclear related disasters
- Chemical and industrial
- Nuclear disasters
- Accident related disasters
- Forest Fires,
- Urban Fires,
- Mines Flooding Oil Spill,
- Major Building Collapse
- Serial Bomb Blasts
- Festival related disasters
- Electrical disasters and Fires
- Air, Road and Rail Accidents
- Boat Capsizing
- Village Fire
- Biologically Related disasters
- Epidemics
- Pest Attacks
- Cattle epidemics
- Food poisoning

## Major Disaster Aspects in Telangana

Drought, Flood and Forest Fires are the Major Disaster related aspect of Telangana.

### Droughts

- We have a largely monsoon dependant irrigation network.
- An erratic pattern, both low (less than 750 mm) and medium (750 – 1125 mm) makes 68 percent of the total sown area vulnerable to periodic droughts.
- Severe and rare droughts occur in arid and semi-arid zones once in almost every 8-9 years.
- Drought is a perennial feature in some states of India like Telangana.
- 16 percent of the country's total area is drought prone and approximately 50 million people are annually affected by droughts.
- In fact, persistent drought with less than average rainfall over a long period of time gives rise to serious environmental problems.
- **Drought Prone Districts:** Chittoor, Kadapa, Anantapur & Kurnool, Mahabubnagar, Medak, Rnagareddy and Nalgonda
- 20 times drought in 40 years,
- 10 times drought in 20 years.
- 5 times drought in 10 years,
- 3 times drought in last 5 years
- Major Drought Years (1997, 2001, 2002 & 2004) 2002-03 has been the worst year of drought
- State GDP severely affected due to recurring drought

## **Flood in Telangana and Andhra Pradesh**

- Inadequate capacity of the rivers to contain within their banks the high flows brought down from the upper catchment areas, following heavy rainfall, leads to flooding.
- Central and coastal Andhra Pradesh spans mainly major river basins of Godavari, Krishna and minor river basins of Nagavali and Vamsadhara on the north and Pennar in the south.
- The Passage of storms/ cyclones in quick succession over a river basin invariably leads to severe floods.
- The problem is exacerbated by factors such as silting of the riverbeds, reduction of the carrying capacity of river channels, beds and banks leading to changes in river courses, obstructions to flow due to landslides, synchronization of floods in the main and tributary rivers and retardation due to tidal effects.
- The flood problems of deltaic regions are attributed to various causes like flatter slope of drains and back flow due to tides.
- On Sep 14 2017, A flood situation prevailed in parts of Hyderabad, following record heavy rains overnight. Daily life was affected badly as many areas of the city were hit by the heavy rains. Keesara in Ranga Reddy district recorded the highest rainfall of 17cm, followed by 11cm in Uppal, 10cm in Malkajgiri and Balapur and 6cm in Medchal.

- On Sep 25 2016, The Indian Air Force (IAF) rescued 24 construction workers who were stranded by floods in Telangana's Medak district.
- On Sept 28 2016, At least 11 people have died after several days of flooding in the Indian state of Telangana.

## Manmade Disasters

- The fast pace of growth and expansion in the name of Development without comprehensive understanding or preparedness has brought forth a range of issues that seek urgent attention at all levels.
- In the absence of such measures growing numbers in our population are at a risk of prospective hazards such as air accidents, boat capsizing, building collapse, electric fires, festival related disasters, forest fires, mine flooding, oil spills, rail accidents, road accidents, serial bomb blasts, and fires.
- The safeguards within existing systems are limited and the risks involved high.
- Nuclear, Chemical and Biological threats are apparent in the present scenario.
- Deliberate international terrorism or accidental secondary fallout can be fatal.
- Creation of specific infrastructure is imperative to avoid a catastrophe in the future.
- However, rapid and effective response needs intensive research and laboratory support.

## Forest Fires

- Forests face many hazards but the most common hazard is fire.
- Forests fires are as old as the forests themselves.
- They pose a threat not only to the forest wealth but also to the entire regime of fauna and flora seriously disturbing the bio-diversity and the ecology and environment of a region.
- Forest fires are usually seasonal.
- They usually start in the dry season and can be prevented by adequate precautions.
- State Governments are aware of the severe damage caused by fires not only trees but also to forests and ecology of the area.
- Successive Five Year Plans have provided funds for forest fire fighting.
- According to NDMA districts like in Warangal 73 Serious, 169 Medium and 287 small forest fires occurred during 1999-2000.

## Telangana State Disaster Response and Fire Service Department

### Objectives

- Prompt response to fire calls and other emergencies like floods, earth quakes etc.
- To issue No Objection Certificate for fire hazardous places.
- Basic Fire Prevention training to security personnel at Fire Hazardous places.
- Creation of public awareness on fire prevention for various sections of society.
- Assistance and advice on conducting Fire Drills.
- To provide awareness in public about the Fire Safety measures.
- To provide standby fire-safety arrangements at large gatherings by charging a nominal amount.
- To provide the ambulance service for rushing the sick and the injured to hospitals at a nominal charge.
- To educate and train people in fire prevention and fire fighting.
- Rescue persons involved in the emergency.
- Improvement of Fire and Rescue Services.
- Strive to save life and property by going promptly to the spot of fire.
- Promote interactions within the department to achieve high Degree of Professional excellence

## HEATWAVE ACTION PLAN

### INTRODUCTION:

- Heat Wave Plan is a Plan intended to protect the population from heat related harm to health.
- It aims to prepare for, alert people to, and prevent, the major avoidable effects on health during periods of severe heat, while the days are sunny in summer, it should not be forgotten that the temperature can get too high, that it can become uncomfortably hot, and for some, it can become dangerously hot putting their life at risk.

### HEAT WAVES

- Spells of abnormally high temperatures that occur in different parts of the country during April to June are referred to as heat waves.
- The term heat wave is a description of prevailing temperature conditions relative to daily normal value.
- The IMD (India Meteorological Department) has laid down the following criteria for describing a heat wave or a severe heat Wave or a Warm Night.
- Heat wave is considered only after the maximum temperature of a station reaches atleast 40°C for plains and atleast 30°C for hilly regions.
- When actual maximum temperature of a station is more than or equal to 40°C.
- Heat wave- Departure from normal temperature is 5°C – 6°C

- Severe Heat wave – Departure from normal temperature is 7°C or more
- When actual maximum temperature is 45°C or more, irrespective of normal maximum temperature, heat wave is declared.
- When actual maximum temperature is 47°C or more, irrespective of normal maximum temperature, Severe Heat Wave is declared.
- Warm Night is declared if actual maximum temperature of a station is more than or equal to 40°C and minimum temperature departure is more than or equal to 5°C.
- Very Warm Night is declared if actual maximum temperature of a station is more than or equal to 40°C and minimum temperature departure is more than or equal to 7°C.
- Coordinated action is needed among government agencies at the State level to reduce the devastating health effects of heat stress on local residents.
- A practical plan of targeted interventions can increase information-sharing, communication, preparedness, and response coordination to improve the most vulnerable populations' resilience to rising temperatures and consequently minimize heat wave fatalities.



## Heat Wave Action Plan

- The Telangana Heat Wave Action Plan aims to provide guidelines on the steps to be taken by the administration for minimising the impact of Heat Waves.
- The Plan's primary objective is to help the population most at risk of Heat related illness to avoid the effects of the heat waves.
- Extreme heat planning includes:
- Identifying vulnerable populations and the health risks specific to each group;
- Developing effective strategies, agency coordination, and response planning to shape a Heat wave Action Plan that addresses heat-health risks;
- Implementing the Heat Action Plan and activating heat alerts; and
- Evaluating and updating the Heat Action Plan regularly.
- Successful implementation of the Heat Action Plan in Telangana requires co-ordination between Government Departments; health care professionals including emergency medical personnel, health center staff, and hospital staff; and community groups.

## River of Telangana

### Rivers and Drainage System of Telangana

#### Drainage systems

Drainage systems, also known as **river systems**, are the patterns formed by the streams, rivers, and lakes in a particular drainage basin. They are governed by the topography of the land, whether a particular region is dominated by hard or soft rocks, and the gradient of the land.

#### **River of Telangana/Drainage System**

- The State is drained by two major rivers namely, Godavari and Krishna and their tributaries before entering in to the state of Andhra Pradesh and finally to Bay of Bengal.
- There are 2 basins and 10 sub basins in the state.
- The major river basins are Godavari, Krishna and sub basins are lower Krishna, middle Krishna, lower Godavari, Indravati, Wainganga, Pranhita, Manjira, Lower Bhima and middle Godavari.
- The pattern of drainage is generally dendritic with wide valleys in western pediplain.
- The drainage of the Eastern Ghat is coarse and dendritic with steep and narrow valleys.
- Most of the smaller streams feed innumerable tanks.

[Join Our Telegram Channel](#)

- The River Godavari with its tributaries viz., Pranahita, Pedda Vagu, Manjira, Maner, Kinnerasani, Sileru and Pamuleru drain whole of northern Telangana.
- The Tungabhadra, Vedavati, Hindri, Musi, Paleru and Maneru rivers drain southern part of the State.
- The drainage basins are characterised by undulating topography comprising a series of ridges and valleys interspersed by hill ranges.

**List of major River of Telangana are following:**

1. Bhima River
2. Godavari
3. Krishna River
4. Manjira
5. Pranahita
6. Tungabhadra
7. Wainganga
8. Wardha

[Join Our Telegram Channel](#)

<u>River</u>	<u>Length (Kms)</u>	<u>Length (Miles)</u>	<u>Drainage Area</u>	<u>Out Flow</u>	<u>Districts of Telangana</u>
Godavari River	1465	910	312812	Bay of Bengal	Nizamabad, Adilabad, Karimnagar, Warrangal, Khammam
Krishna River	1400	870	258948	Bay of Bengal	Nalgonda, Khammam
Bhima River	861	535	70614	Krishna River	Mahaboobnagar
Manjira River	724	450	30844	Godavari River	Nizamabad, Medak
Musi River	256	159	NA	Krishna River	Nalgonda, Ranga Reddy
Paleru River	112	70	NA	Krishna River	Khammam



[Join Our Telegram Channel](#)

## KRISHNA RIVER SYSTEM OF River of Telangana:

- The river Krishna is an Inter-State river in Southern India. It is the second largest river in Peninsular India, rises in the Western Ghats at an altitude of 1337 m. near Mahabaleshwar in Maharashtra State.
- It flows across the whole width of the peninsula, from west to east, for a length of about 1400 km, through Maharashtra, Karnataka, Telanagana and Andhra Pradesh. The entire catchment area of Krishna basin is 2,58,948 sq km.
- The principal tributaries of Krishna in Karnataka are Ghataprabha, Malaprabha, Bhima and Tungabhadra. All these rivers except the Malaprabha River having their catchment area both in Karnataka and Maharashtra.

Brief description of these tributaries are given below:

Sl. No.	Name of the tributary	Catchment area in Sq.kms.	Origin ,Altitude &Length	Sub-tributaries	Name of the state
1	Ghataprabha	8829	Western ghats, 884m, 283kms	Hiranyakeshi, Markandeya	Karnataka & Maharshatra
2	Malaprabha	11549	Western Ghats, 792.48m, 306kms	Bennihalla,Hirehalla, Tas nadi	Karnataka
3	Bhima	70614	Western Ghats, 945m, 861kms	Combined waters of Mula & Mutha Ghod, Nira,Sina	Karnataka & Maharshatra
4	Thungbhadra	47866	Western ghats at Gangamula, 1198m, 531kms	Combined waters of Tunga & Bhadra, Varada, Hagari(vedavathy)	Karnataka & Andhra Pradesh

## GODAVARI RIVER SYSTEM

- The river Godavari rises in the Nasik district of Maharashtra about 80km from the shore of Arabian sea, at an elevation of 1067m, after flowing for about 1465km in a general south-easterly direction, through Maharashtra and Andhra Pradesh, Godavari falls into the Bay of Bengal above Rajamundry.
- The principal tributaries of Godavari are the Pravara, the Purna, the Manjra, the Pranahita, the Indravathy and the Sabari but Manjra River, having its partial catchment area in the State of Karnataka.

Sl. No.	Name of the tributary	Catchment area in Sq.kms.	Origin ,Altitude &Length	Sub-tributaries	Name of the state
1.	Manjra	15,667 Sq.kms - Maharashtra, 4,406 Sq.kms - Karnataka, 10,772 Sq.kms -Andhra Pradesh	Bala ghat range of hills, 823m	Tirina,Karanja, Haldi,Lendi & Mannar	Maharashtra, Karnataka & Andhra Pradesh



## Hydrography of Telangana

1	Rivers	Godavari Krishna Maner Pranhita Munneru Manjira Musi Palar Tungabhadra Bhima Penganga Wardha Dindi Taliperu
2	Waterfalls	Kuntala Bogatha Pochera Mallela Theertham Paarakaphi Savatula Gundam Sirnapally Gayatri
3	Lakes	Bhadrakali Himayat Sagar Hussain Sagar Lotus Pond Osman Sagar Pakhal Palair Ramappa Shamirpet Saroornagar Laknavaram Ramanthapur Kapra Safilguda Ramakrishnapuram Edulabad Waddepally
4	Dams	Nagarjuna Sagar Srisailam Sriram Sagar Nizam Sagar Singur Jurala Lower Manair Dam LMD Pulichinthala Yellampalli Rajolibanda Dam Icchampally Manjira

### Moosy River

- The Moosy River (also known as the Musi River) is a minor water body in the district of Prakasam.
- The river Moosy rises near Dokkalasala in the Veligondas.
- It flows first east and then south through Markapur, Darsi, Northern border of Podili, Kondepi, Vennuru, Koru Uppalapadu, Tangutur, Alakurapadu and Kothapatnam Mandals falls into the Bay of Bengal near Madanur of Kothapatnam Mandal.
- Its tributaries are the Gajjaleru, Dondaleru and Atleru.
- It feeds tanks of Podili and Konakanamitla Mandals.

## Kinnerasani River

- Kinnerasani' is an important tributary of Godavari flowing through the Warangal and Khammam districts of Telangana and West Godavari district of Andhra Pradesh.
- In the Khammam District, a dam known as the Kinnerasani Dam is built on this river.
- The back waters of the dam are surrounded by verdant hills and come to be protected under the precincts of the Kinnerasani Wildlife Sanctuary.
- The river drains on the right bank of Godavari in Telangana and forms common boundary between Andhra Pradesh and Telangana states before its confluence with main Godavari River.





# **Agriculture and allied sectors of Telangana**

## Agriculture of Telangana

### Agriculture and Cropping pattern of Telangana

#### Salient Features of Indian/Agriculture of Telangana

**1.Subsistence Agriculture:** Most parts of India have subsistence agriculture. This type of agriculture has been practised in India for several hundreds of years and still prevails in a larger part of India in spite of the large scale change in agricultural practices after independence.

**2.Pressure of population on Agriculture:** Despite increase in urbanization and industrialization, about 70% of population is still directly or indirectly dependent on agriculture.

**3.Mechanization of farming:** Green Revolution took place in India in the late sixties and early seventies. After more than forty years of Green Revolution and revolution in agricultural machinery and equipments, complete mechanization is still a distant dream

**4.Dependence upon monsoon:** Since independence, there has been a rapid expansion of irrigation infrastructure. Despite the large scale expansion, only about one third of total cropped area is irrigated today. As a consequence, two third of cropped areas is still dependent upon monsoon. Monsoon in India is uncertain and unreliable. This has become even more unreliable due to change in climate.

**5. Variety of crops:** India has diversity of topography, climate and soil. Since India has both tropical and temperate climate, crops of both the climate are found in India. There are very few countries in the world that have variety comparable to that of India..

**6. Predominance of food crops:** Since Indian agriculture has to feed a large population, production of food crops is the first priority of the farmers almost everywhere in the country. However, in recent years, there has been a decline in the share of land used for food crops due to various other commercially most advantageous uses of this land.

**7. Seasonal patterns:** India has three distinct agricultural/cropping seasons. You might have heard about kharif, rabi and zaid. In India there are specific crops grown in these three seasons. For example rice is a kharif crop whereas wheat is a rabi crop.

### **Profile of Agriculture of Telangana**

- 1.Total Geographical area: 114.84 Lakh ha
- 2.Gross cropped area: 88 Lakh ha
- 3.Net cropped area: 61 Lakh ha
- 4.Gross Irrigated area: 64 Lakh ha
- 5.Net Irrigated area: 89 Lakh ha

6. Number of Farm Holdings: 54 lakh
  1. Marginal: 41 Lakh
  2. Small: 27 lakh
  3. Others: 86 lakh
7. Average Farm Holding size: 1.12 Ha
8. Average Annual Rainfall: 906.6 mm
9. Cropping Intensity: 27%
10. Irrigation Intensity: 1.38%

### Crops grown in different agro-climatic zones of Agriculture of Telangana

- Telangana grows 27 important crops in Kharif and Rabi seasons put together covering an area of about 53.51 lakh ha.
- The important crops grown are Rice (14.19) lakh ha, Maize (6.63) lakh ha, Pulses (6.11) lakh ha, Groundnut (1.89) lakh ha, Cotton (18.13) lakh ha, Chillies (0.83) lakh ha and Sugarcane (0.41) lakh ha.

S. No.	Agro-Climatic zone	Kharif season Crop	Rabi season Crop
1	Northern Telangana Zone	Rice, Cotton, Maize, soybean, Red gram, Green gram, Turmeric	Rice, Maize, Jowar, Bangal Gram, Green Gram, Sesame, Ground net, Sunflower
2	Central Telangana Zone	Rice, Cotton, Maize, soybean, Red gram, Green gram, Sesame	Rice, Maize, Bengal Gram, Green Gram, Black Gram, Ground net, Sunflower
3	Southern Telangana Zone	Rice, Cotton, Maize, Red gram, Green gram, Castor, Sesame	Rice Maize Ground net, Bengal Gram, Safflower, Sunflower

## Major Crop of Agriculture of Telangana

### Rice Crops

- Rice is the most important food crop of India. It is predominantly a Kharif or summer crop.
- It covers about one third of total cultivated area of the country and provides food to more than half of the Indian population.
- Maximum population of India is of rice consumers.

**1. Temperature:** Rice requires hot and humid conditions. The temperature should be fairly high i.e. 24°C mean monthly temperature with average temperature of 22°C to 32°C.

**2. Rainfall:** Rainfall ranging between 150-300 cm is suitable for its growth in areas of Punjab, Haryana and Western Uttar Pradesh where rainfall is less than 100 cm, rice is cultivated with the help of irrigation.

**3. Soil:** Rice is grown in varied soil conditions but deep clayey and loamy soil provides the ideal conditions. Rice is primarily grown in plain areas. It is also grown below sea level at Kuttinad (Kerala), hill terraces of north eastern part of India and valleys of Kashmir.

**Pulses:**

- It includes a number of crops which are mostly leguminous and provide invaluable proteins to the vegetarian population of India.
- As they have fewer sources of proteins in comparison to those who consume meat and fish.
- They also serve as excellent forage and grain concentrates in the cattle feed.
- Apart from that these leguminous crops have the capacity to fix atmospheric nitrogen in the soil and are normally rotated with other crops to maintain and restore soil fertility.
- A large variety of pulses are found in India.
- These are gram, tur or arhar (Pigeon Pea or Red Gram), urd (black gram), mung (green gram), masur (lentil), kulthi (horse gram), matar (peas) etc. But among these above mentioned varieties only gram and tur or arhar are more important pulses.
- **Gram:** It is the most important of all the pulses. It accounts for about 37% of the production and about 30% of the total area of pulses in India. It is a rabi crop which is sown between September and November and is harvested between February and April. It is either cultivated as a single crop or mixed with wheat, barley, linseed or mustard. Some of the geographical conditions are as follows:

- **Temperature:** It is grown in a wide range of climatic condition. Mild cool and comparatively dry climate with 20°C-25°C temperature.
- **Rainfall:** 40-45 cm rainfall is favourable for gram cultivation.
- **Soil:** It grows well on loamy soils.

## **Cotton:**

- Cotton is the most important fibre crop not only of India but also of the entire world. It not only provides a raw material for cotton textile industry but also its seed is used in Vanaspati oil industry.
- The cotton seed is also used as part of fodder for milch cattle for better milk production.
- Cotton is basically a kharif crop and grown in tropical and sub-tropical areas.
- Some of the geographical conditions are as follows:

**1. Temperature:** Cotton is the crop of tropical and sub-tropical areas and requires uniformly high temperature varying between 21°C and 30°C.

**2. Rainfall:** It grows mostly in the areas having at least 210 frost free days in a year. It requires modest amount of rainfall of 50 to 100cm. However, cotton is successfully grown with the help of irrigation in the areas where rainfall is less than 50 cm. High amount of rainfall in the beginning and sunny and dry weather at the time of ripening are very useful for a good crop.

**3. Soil:** Cotton cultivation is very closely related to Black soils of Deccan and Malwa plateau. However, it also grows well in alluvial soils of the Satluj-Ganga plain and red and laterite soils of the peninsular region.

### Groundnut

- Groundnut is most important oil seeds of India. Grown as both as kharif and Rabi crop but 90-95% of the total area is devoted to kharif crop.
- Groundnut thrives best in the tropical climate and requires 20°C to 30°C temperature.
- 50-75 cm rainfall is favourable for groundnut cultivation.
- Groundnut is highly susceptible to frost, drought, continuous rain and stagnant water. It needs dry winter at the time of ripening.
- Well drained light sandy loams, red, yellow and black soils are well suited for its cultivation.
- Ground nut accounts for half of the major oilseeds produced in India. India is the second largest producer of groundnut (After China).
- Top three states producing ground nut are Gujarat, Andhra Pradesh, Telangana and Tamil Nadu.

### Jowar

- Jowar is grown both as kharif as well as a rabi crop.
- As a kharif crop, it grows well in areas having mean monthly temperature of 26°C to 33°
- As a rabi crop can be grown in areas where the mean monthly temperature does not fall below 16°C.



- It requires more than 30 cm rainfall during the growing period and does not grow where the rainfall exceeds 100 cm.
- Jowar is par excellence a rainfed crop of dry farming areas where irrigation is not used.
- Both excessive moisture and prolonged droughts are harmful for its proper growth.

### **Department of Agriculture of Telangana Government**

- The Department of Agriculture of Telangana has been created mainly to provide Agricultural Extension services to farmers and to transfer the latest technical knowledge to the farming community, introduction of high yielding varieties, laying demonstrations, imparting training to farmers to improve skills & knowledge to boost up the agricultural production and productivity.
- The other objectives of the Department are to assess requirements of agriculture inputs well in advance and to regulate their production and monitor timely supply of seeds, fertilizers, pesticides, implements and credit, etc to farmers.

**Vision** -To enable each and every farmer achieve sustainable and economical agriculture productivity.

**Mission of the Department**

- Attain 6% Growth Rate and Increased Returns on investment to farmers through improved Technology
- Effective Extension Reach
- Mechanisation, Marketing tie up, Adequate Credit, Crop Insurance
- The Department also performs the statutory functions under various Acts and regulations (i.e., quality control) to ensure supply of quality inputs i.e., Seeds, fertilizers and pesticides to farmers and implementation of Dangerous Machines Regulation Act.
- The Department also carries out certain other facilitating functions such as
  1. Soil testing,
  2. Soil and Water Conservation,
  3. Soil Survey,
  4. Credit assessment/ arrangements,
  5. Media Production,
  6. Trainings to farmers,
  7. Arranging P.P. campaigns/ Diagnostic team visits whenever necessary,
  8. Monitoring and Evolution,
  9. Disaster Management,
  10. Crop Insurance,
  11. Agricultural Mechanization,
  12. Extending technical assistance to various agencies

## **Animal Husbandry of Telangana**

### **Animal Husbandry of Telangana**

- Telangana accounts for 3.5% of India's total geographical area and 2.9% of population and ranks 12th both in geographical area and population among Indian States.
- The State is newly formed 29th State in India and blessed with rich livestock resources especially cattle and Sheep population accounting to 5.52% of country's population. Rural population in the State is predominantly agricultural with more than 2/3 of its workforce being engaged directly in the agriculture sector.
- About 29 lakh families in Telangana State are engaged in livestock sector for their livelihood.
- The value of livestock produce is estimated to be Rs. 12403 crores at current prices and the livestock sector contributes 4.86% to GSDP (2010-11 Third Revised Estimates).

### **About Animal Husbandry**

- Animal Husbandry is one of the rapidly expanding sectors, playing a significant role in the rural economy by providing gainful employment to a large number of small/marginal farmers and agricultural labourers and raising their economic status.
- The economic support programs like distribution of Milch animals, sheep and poultry units have come to the rescue of the beneficiaries particularly scheduled castes, scheduled tribes and economically backward sections of the society.

### **Goat Farming**

- Goat is known as 'Poor man's cow' in India and is a very important component in dry land farming system.
- Marginal or undulating lands unsuitable for other types of animals like cow or buffalo, goat is the best alternative.
- With very low investments goat rearing can be made in to a profitable venture for small and marginal farmers.

### **Sheep farming**

- Few countries in the world have no sheep.
- They are found in tropical countries and in the arctic, in hot climates and in the cold, on the desert and in humid areas.
- There are over 800 breeds of sheep in the world, in a variety of sizes, shapes, types and colours.
- Sheep were domesticated long before the dawn of recorded history.
- Wool fibres have been found in remains of primitive villages of Switzerland that date back an estimated 20000 years.
- Egyptian sculpture dating 4000-5000 B.C. portrays the importance of this species to people.
- Much mention is made in the Bible of flocks, shepherds, sacrificial lambs, and garments made of wool.
- The Roman empire prized sheep, anointed them with special oils, and combed their fleece to produce fine quality fibres that were woven into fabric for the togas of the elite.

- Perhaps the first ruminants domesticated by man along with goats, sheep are a very valuable and important asset to mankind.
- Domesticated sheep : phylum Chordata (backbone), class Mammalia (suckle their young), order Artiodactyla (hooved, even-toed), family Bovidae(ruminants), genus Ovis (domestic and wild sheep), and species Ovisaries

### **Emu rearing**

- Emus belong to ratite group and have high economic value for their meat, eggs, oil, skin and feathers.
- These birds are adaptable to varied climatic conditions.
- Although emu and ostrich were introduced in India, emu farming has gained much importance.
- Ratite birds have poorly developed wings and include emu, ostrich, rhea, cassowary and kiwi.
- Emu and ostrich are reared commercially in many parts of the world for their meat, oil, skin and feathers, which are of high economic value.
- The anatomical and physiological features of these birds appear to be suitable for temperate and tropical climatic conditions.
- These birds can be well maintained on extensive (ranches) and semi intensive rearing systems with reasonably high fibrous diets.
- United State, Australia and China are leading in emu farming. Emu birds are well adapted to Indian climatic conditions.

## Features of Emu

- Emu has long neck, relatively small naked head, three toes and body covered with feathers. Birds initially have longitudinal stripes on body (0-3 months age) then gradually turn to brown by 4-12 months age.
- Mature birds have bare blue neck and mottled body feathers. Adult bird height is about 6 feet with a weight of 45-60 kg. Legs are long covered with scaly skin adaptable to hardy and dry soil.
- Natural food of emu is insects, tender leaves of plant and forages. It also eats different kinds of vegetables and fruits like carrot, cucumber, papaya etc. Female is the larger of the two, especially during breeding season when the male may fast.
- The female is the dominant member of the pair.
- Emus live for about 30 years.
- It may produce eggs for more than 16 years. B
- irds can be maintained as flock or pair.



## Rabbit Farming

### Why Rabbit Farming?

- With available small investment and in a small place rabbit farming gives more income
- Rabbits eat ordinary feed and convert them into a protein rich high quality meat
- Apart from meat production they can also be reared for hide and fur.

### Rabbit Farming is for whom?

- For landless farmers, uneducated youth and women, rabbit farming gives an additional income as a part time job

### Advantages of Rabbit Farming

- By rabbit rearing one can produce a quality protein rich meat for his own family
- Rabbits can be fed with easily available leaves, waste vegetables, grains available in the home
- Growth rate in broiler rabbits is very high. They attain 2 kgs at the age of three months
- Litter size (Number of young ones born/ kindling) in rabbits is high (around 8-12)
- When compared to the other meats rabbit meat contain high protein (21%) and less fat (8%). So this meat is suitable for all age groups from adults to children

## Quail Farming

### Advantages of quail farming

- Requires minimum floor space
- Needs low investment
- Quails are comparatively sturdy birds
- Can be marketed at an early age ie. five weeks
- Early sexual maturity – starts laying eggs in about six to seven weeks of age
- High rate of egg laying -280 eggs per year
- Quail meat is tastier than chicken and has less fat content. It promotes body and brain development in children.
- Nutritionally, the quail eggs are on par with that of chicken eggs. Moreover, they contain less cholesterol.
- Quail meat and eggs are a nutritious diet for pregnant and nursing mothers.





## *Turkey farming*

### ***Breeds of turkeys in India***

The varieties are as follows

**1. Board breasted bronze:** The basic plumage color is black and not bronze. The females have black breast feathers with white tips, which help in sex determination as early as 12 weeks of age.

**2. Board breasted white:** This is a cross between Board breasted bronze and White Holland with white feathers. White plumage turkeys seems to be suitable Indian-Agro climatic conditions as they have better heat tolerance and also good and clean in appearance after dressing.

**3. Beltsville small white:** It closely resembles the Board breasted white in color and shape but smaller in size. Egg production, fertility and hatchability tend to be higher and broodiness tends to be lower than heavy varieties.

**4. Nandanam turkey 1:** This variety is a cross between the black desi variety and exotic Beltsville small white variety. It is suited for Tamil Nadu climatic conditions

### **Marketing of turkeys**

The body weight of adult male and adult female turkey at the 16th week is 7.26 kg and 5.53kg. This is optimum weight for marketing the turkeys.

**Turkey egg:**

- The turkey will start lay from the 30th week of age and its production period is 24 weeks from the point of lay.
- Under proper feeding and artificial lightening management turkey hens lay as much as 60-100 eggs annually.
- Nearly 70 percent of the eggs will be laid in the afternoon.
- The turkey eggs are tinted and weigh about 85 gms.
- Egg is noticeably pointed at one end with strong shell.
- The protein, lipid carbohydrate and mineral content of turkey egg are 13.1%, 11.8%, 1.7% and 0.8% respectively. The cholesterol is 15.67-23.97 mg/gm of yolk

**Turkey meat:**

- People prefer turkey meat because of its leanest nature.
- The protein, fat, energy value of turkey meat are 24%,6.6%, 162 Calories per 100 gm of meat.
- Mineral like potassium, calcium, magnesium, iron, selenium, zinc and sodium are present.
- It is also rich in essential amino acids and vitamins like niacin, vitamin B6 and B12.
- It is rich in unsaturated fatty acids and essential fatty acids and low in cholesterol.

- A market study shows that a male turkey sold at 24 weeks of age weighing 10 to 20 kg with expenditure of Rs.300 to 450 will give a profit of Rs. 500 to 600.
- Likewise a female will give a profit of Rs.300 to 400 in a span of 24 weeks time. Besides, the turkey can be reared in scavenging and semi-scavenging conditions also.

### **PIG FARMING**

#### **Advantages of pig rearing**

- Pigs convert inedible feeds, forages, certain grain byproducts obtained from mills, meat by products, damaged feeds and garbage into valuable nutritious meat. Most of these feeds are either not edible or not very palatable to human beings
- Pig grows fast and is a prolific breeder, farrowing 10 to 12 piglets at a time. It is capable of producing two litters per year under optimal management conditions
- The carcass return is quite high ie. 60-80 percent of live body weight
- With a small investment on building and equipment, proper feeding and sound disease control programme the farmer can profitably utilize his time and labour in this subsidiary occupation
- The faeces of pigs is used as a manure to maintain soil fertility

### Pig farming- for whom?

- Small and landless farmers
- Part time earning for educated youth having agriculture as occupation
- Uneducated / Unemployed youth
- Farm women.

### Breeds

The indigenous pig has been the basis used for pig production for a long period of time. It is small in size. Improved breeds are now being used for grading up the form the basis for pig production in the rural areas.

### **Animal Husbandry Department of Govt of Telangana**

- The mandate given to Animal husbandry department is to build the health of the nation by increasing the availability of Animal origin foods like milk, meat and eggs to human population through scientific breeding, feeding and disease management of livestock. Besides, it strives to improve the wealth of the nation by enhancing the animal productivity and their production. In addition, various livestock based poverty alleviation programmes are implemented by the Department.
- The Livestock Development has attained the status of an Agro-based industry generating economic growth, gainful employment and livelihood to many weaker sections in the State.

- Small and marginal farmers and landless poor contributing to 62% of total milk production own 70% of livestock in Andhra Pradesh.
- Nearly women provide 60% of livestock farming labour. Similarly rural shepherds own 90% of sheep population and entire piggery development is the monopoly of weaker sections.
- Thus the livestock sector has become a powerful tool for socio-economic change and an important priority component in rural development and poverty alleviation programmes in the State
- The charter of the the Animal Husbandry Department in brief
- Improving the production potential by way of breed up gradation in cattle and buffaloes through Artificial insemination.
- Providing preventive and curative health care to livestock through constant vigil on disease outbreaks, rendering preventive vaccinations, deworming and treatment of ailing animals.
- Augmenting fodder production to meet the nutritional requirements of livestock.
- Providing relief measures to livestock during natural calamities.
- Building awareness among farmers on profitable livestock production.
- Coordinating with health department in controlling diseases of zoonotic importance.
- Providing technical support to livestock based poverty alleviation programme.
- Updating the skills of technical as well as Para veterinary staff at regular intervals in the areas of scientific breeding, feeding and management of livestock.

**LIVESTOCK PRODUCTION LEVELS ARE INDICES OF PROGRESS:**

- The production levels of major livestock products like Milk, Meat and Eggs are the indices of progress in livestock sector.
- The milk production has increased from 18.08 lakh tonnes in 79-80 to 76.24 lakh tonnes in 2005-06.
- The meat production has increased from 96320 tonnes in 79-80 to 457137 tonnes in 2005-06.
- The egg production has increased from 17119 lakh nos in 79-80 to 164534 lakh nos in 2005-06.
- The per capita availability of Milk has increased from 168 gms/day (1997-98) to 286 gms/day (2005-06).
- The Per capita availability of Eggs has increased from 141 nos/annum (1997-98) to 202 nos/annum (2005-06).
- The Per capita availability of Meat has increased from 9.21 gms/day (1997-98) to 15.35 gms/day (2005-06) inspite of rapid growth in human population, which is a remarkable achievement.

## Fishing of Telangana

### Fisheries in India

- Indian fisheries and aquaculture is an important sector of food production, providing nutritional security to the food basket, contributing to the agricultural exports and engaging about fourteen million people in different activities.
- With diverse resources ranging from deep seas to lakes in the mountains and more than 10% of the global biodiversity in terms of fish and shellfish species, the country has shown continuous and sustained increments in fish production since independence.
- Constituting about 6.3% of the global fish production, the sector contributes to 1.1% of the GDP and 5.15% of the agricultural GDP.
- The total fish production of 10.07 million metric tonnes presently has nearly 65% contribution from the inland sector and nearly the same from culture fisheries.
- Paradigm shifts in terms of increasing contributions from inland sector and further from aquaculture are significations over the years.
- With high growth rates, the different facets of marine fisheries, coastal aquaculture, inland fisheries, freshwater aquaculture, coldwater fisheries to food, health, economy, exports, employment and tourism of the country.

## **Blue Revolution**

- There is a huge untapped potential in fisheries and aquaculture, which can contribute considerably to improve the livelihoods as also women empowerment.
- The future development of aquaculture depends on adoption of new and innovative production technologies, management and utilization of less utilized water resources and proper market tie-ups.
- Reservoir fisheries offer a major opportunity to enhance fish production in the country.
- In the marine sector, while the coastal fisheries have been fully exploited, deep-sea fisheries resources are yet to be harnessed.
- Diversification and high value produce will add new dimensions to this sector.
- Proper post-harvest handling, reduction of losses and hygienic primary processing are important to realize full potentials of the sector.
- Simultaneously, effective marketing arrangements are to be made to ensure adequate returns to the fishers and the farmers and also make available of good quality fish at affordable prices to the consumers.
- With these in view, an end-to-end approach from ensuring proper input availability to efficient marketing is contemplated, for a 'win-win' situation for both the fish producer and the consumer.



## Fishing of Telangana

- Fisheries are one of the fast-growing sectors generating income and employment.
- The sector aims at exploitation of all the possible resources under capture and culture fishery base for increasing fish production and productivity through sustainable development.
- The sector is contributing considerably for, food security, nutrition and health, lively hood security to rural population, and welfare of fishers.

### Resources of Fishing of Telangana

#### Natural resources:

- Inland resources: There are 78 reservoirs, and about 35031 perennial, long seasonal and short seasonal tanks with a water spread area of 5.87 Lakh hectares.
- Pond culture: Area under pond culture is 781 ha.



Description	No.	Water Spread Area (in Lakh Ha.)
<b>Reservoirs</b>		
Large > 5000 ha	8	1.35
Medium 1000-5000 Ha	17	0.28
Small < 1000 ha	53	0.22
<b>Total</b>	<b>78</b>	<b>1.85</b>
<b>Tanks</b>		
Perennial	438	0.38
Long Seasonal	3212	1.20
Short Seasonal Tanks	31381	2.43
<b>Total</b>	<b>35031</b>	<b>4.01</b>
Aqua culture ponds	474	781 (Ha.)
Rivers and canal		5573 Km



## **TELANGANA STATE FISHERMEN CO-OP. SOCIETIES FEDERATION LTD, HYDERABAD**

- The objective of Telangana State Fishermen Cooperative Societies Federation Ltd, Hyderabad (TSFCOF) as spelt out in its bye-law is to carry out activities for promoting, procurement, processing and marketing of fish and fishery products for the total development (Economic, Social and Culture) of fishermen community.
- The Telangana State Fishermen Cooperative Societies Federation Ltd, Hyderabad was registered under APCS Act 1964 with registration no. 1/2015, dt: 25-02-2015.
- This organization is an apex federation under the control of Government of Telangana state.

### **OBJECTIVES OF FEDERATION**

1. Fish marketing of fresh and dry by procuring from the societies
2. Supply of inputs like Nets, Gears and Coracles
3. Export of fish products
4. Importing training to the Fishermen in innovative methods in Fisheries
5. To act an agent of State Government agreeing to implement policies formulated by the State Government for the development of fishery wealth and fishermen.

## **MEMBERSHIP**

There shall be 3 Classes of membership as Under:-

1. 'A' Class open to Dist level Fishermen Cooperative Societies.
2. 'B' class open to Government
3. The primary Fisheries Coop-society may become nominal member to avail services from Federation, as associate member without voting rights.
4. Every member shall hold at least one share.
5. Any Society subject to byelaw No. 3(a) shall by a resolution of its Managing Committee send its President/Chairman as delegate to the Federation.

## **MANAGING COMMITTEE**

The Management of the Federation shall Vest in Board of Directors consisting of 5 members. The Managing Committee of the Federation shall consist of the following for a period of five years.

1. 5 Directors representing 'A' Class share holders i.e Representatives of "A" Class Share holders shall elect the directors from among "A" Class members.
2. One Director to. be nominated by N.C.D.C.
3. Principal Secretary to Govt/ Secretary to the Government, Fisheries Department or his nominee.
4. The Commissioner of Fisheries or his nominee.
5. The Managing Director of the Federation shall be Ex-officio member of the Board.
6. The Managing Director will be by appointment,
  1. The elected directors will elect president and Vice-President from among themselves.
  2. Any elected member of the Board may at any time resign from the office by sending a letter of resignation addressed to the Managing Director of the Federation. The resignation shall come into effect only after acceptance by the Committee. The vacancy caused on this account shall be filled up by co-option, by selecting a candidate from among similar category.

**Government of Telangana, Fisheries Department**

**Vision**

- Optimal utilization of natural resources for fish production, promotes freshwater aquaculture, supported by infrastructure and trained manpower.

**Mission**

1. Holistic development of the sector, with focus on enhancement of productivity and production
2. Self sufficiency in fish seed demand
3. Supply of fish at an affordable price in hygienic condition
4. Render welfare schemes to fishers.

**Details of schemes/programmes:**

**Developmental Schemes:**

- Leasing of water bodies to FCSs for the development of **Fishing of Telangana**.
- Stocking of fish seed on 100% grant in reservoirs and tanks
- Strengthening of Govt. fish seed farms
- Establishment of fish markets in Gram Panchayats and Municipalities
- Establishment of community halls

- Installation of cages in water bodies
- Subsidy for construction of fish/prawn ponds and inputs for 1st year
- Organizing SHGs of fishermen/women and providing revolving fund.

**Welfare Schemes of Fishing of Telangana:**

- Group Accident Insurance scheme to fishermen and ex-gratia
- Relief-cum-savings scheme
- Assistance for construction of houses to fishermen

**Extension programs of Fishing of Telangana:**

- Conducting awareness programmes to Fishermen /Fisherwomen/ Farmers /Ø entrepreneurs stake holders
- Organizing capacity building programmes to field functionaries to transfer theØ knowledge to farmers/fishermen
- Organizing field visits to educate the farmers/fishermen, Organizing stateØ /National level workshops, seminars in coordination with the other fisheries related organizations such as KVK, ATMA, NGOs.

**Regulatory Activities of Fishing of Telangana:**

- Conservation and regulation of fisheries in reservoirs under licensing system.

## Horticulture of Telangana

### **Definition of Horticulture:**

- Horticulture may be broadly defined as the Science and art of growing fruits, vegetables and flowers and crops like spices condiments and other plantation crops.
- It is a science of cultivation of Garden plants.
- The word Horticulture is derived from the Latin word Hortus meaning enclosure (garden) and culture – meaning, cultivation,. Thus Horticulture means culture or cultivation of garden crops.

### **Branches of Horticulture:**

- Horticultural Science is the most distinct branch of Agricultural Sciences and can be divided into four different branches as follows.

### **Main Branches:**

1. Pomology- It deals with cultivation of fruit crops.
2. Olericulture- It deals with cultivation of vegetable crops
3. Floriculture- It deals with cultivation of ornamental flowers and landscaping.
4. Fruit and vegetable preservation- It deals with the principles of fruit and vegetable preservation



**Sub Branches:**

1. Plantation and Medicinal plants.
2. Ornamental Gardening
3. Landscape gardening and
4. Nursery plant production

OUR STUDY CIRCLE



## Horticulture of Telangana

- **Horticulture of Telangana** has over the years emerged as an indispensable part of Agriculture by offering wide range of crop diversification choices to farmers and providing opportunities for sustaining large number of agro-industries which have created employment opportunities to semi-skilled and unskilled labour force.
- In fact, **Horticulture of Telangana** as a sub-sector is a revelation – benefiting from an impressive base has shown remarkable signs of progress in Telangana.
- **Horticulture of Telangana** is the growth engine of Telangana State and is the chief source of income to the economy of the state.
- It contributes approx 5.16% GSDP of the State.
- In India, Telangana State stands 3rd in area and 8th in production of fruits and vegetables.
  1. Total Geographical Area: 114.84 Lakh Ha
  2. Total Net Irrigated Area 17.73 Lakh Ha.
  3. Area under Horticulture: 8.20 Lakh Ha (1st Estimates 14-15)
  4. Production of Hort. Crops: 94.54 Lakh MT
  5. Telangana stands 3rd in area & 8th in production of fruits in the country.
  6. Ranks 1st in area & Production of Turmeric.
  7. Telangana stands 11th in Area & 13th in Production of Vegetables.
  8. Fruits and vegetables constitutes 74% of the total horticulture cropped area

**Telangana Potential in Horticulture of Telangana**

- Suitable Agro- Climatic conditions and Soils.
- Availability of vast extents of land for area expansion.
- Well connected rail, road and air network. Increased awareness among consumers for nutritive diet i.e fresh Fruits & Vegetables.
- Large Network of Nurseries / Seed Agencies / R&D
- Enterprising & Progressive farming community. Mostly (80%) dependent on farming activity.
- Export potential for Mango, Banana, and Vegetables & Flowers – International Airport – Potential to become export Hub.
- Blooming of Retail Fresh Chains in Hyderabad – provide impetus to production & ensuring better price realization to grower.
- Agro based industries can spur generation of employment in future in Telangana State

**AREA PRODUCTION – 2015-16 (Final Estimate)**

**(Area in lakh Ha & Production in Lakh MTs)**

S. No.	Name of Crop	Area	Production
1	Fruits	3.235	41.972
2	Vegetables	1.718	31.953
3	Flowers	0.037	0.14
4	Plantation Crops	0.148	0.62
5	Spices	1.596	6.97
	Total	6.734	81.65

## **Mission for Integrated Development of Horticulture of Telangana**

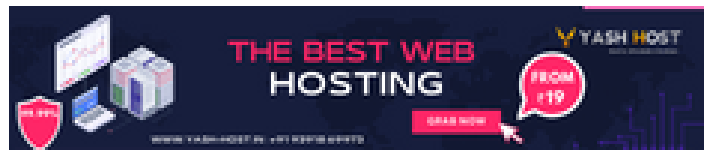
The State Horticulture Mission (Mission for Integrated Development of Horticulture) was launched on 3rd November, 2005, under National Horticulture Mission.

### **Objectives**

- To provide holistic growth of the horticulture sector through an area based regionally differentiated strategies which include research, technology promotion, extension, post harvest management, processing and marketing, in consonance with comparative advantage of each State/region and its diverse agro-climatic feature;
- To enhance horticulture production , improve nutritional security and income support to farm households;
- To establish convergence and synergy among multiple on-going and planned programmes for horticulture development;
- To promote, develop and disseminate technologies, through a seamless blend of traditional wisdom and modern scientific knowledge;
- To create opportunities for employment generation for skilled and unskilled persons, especially unemployed youth.

## Horticulture Districts of Horticulture of Telangana

- Adilabad
- Nirmal
- Manchiryal
- Asifabad (Komaram Bheem)
- Nizamabad
- Kamareddy
- Karimnagar
- Jagityal
- Peddapalli
- Siricilla
- Sanga Reddy
- Medak
- Siddipet
- Warangal (Urban)
- Warangal (Rural)
- Mahaboobabad
- Bhupalapally
- Janagam
- Khammam
- Kothagudem
- Nalgonda
- Suryapet
- Yadadri
- Mahaboobnagar
- Nagarkurnool
- Wanaparthy
- Gadwal (Jogulamba)
- Vikarabad
- Ranga Reddy
- Medchal (Malkajgiri)



**Rastriya Krishi Vikas Yojana**

- Telangana is endowed with suitable agro-climatic conditions for production of various horticulture crops especially vegetables production. Horticulture sector has been identified as one of the prime sector contributing to State GSDP.
- Prospective planning of vegetables is done under RKVY for 3 seasons i.e. Kharif, Rabi and summer with following objectives:

**Objectives:**

- Production enhancement by distribution of good quality hybrid vegetable seed to meet the continuous demand of vegetables and thereby providing support to nutritional security.
- To ensure availability of vegetables throughout the year and improvement of nutritional standards in rural areas.
- Creation of infrastructure like permanent pandals at farmer's field for quality production of creeper vegetables.
- To promote new technologies.
- To minimize the post harvest losses.
- To enhance knowledge and skills of farmers with latest advanced technologies by conducting trainings and exposure visits.

## MAJOR SCHEMES UNDER RKVY

1. Supply of Hybrid Vegetable Seed – 50% subsidy on Hybrid vegetable seed @ Rs. 3000/- per hectare and a maximum of 2 hectares per beneficiary.
2. Creeper Mesh- 50% assistance not exceeding Rs. 40000/-per acre. Maximum eligibility is 1 hectare per beneficiary.
3. Supply of Shade net for vegetable cultivation @ Rs. 25/- per Sqm. unit cost – 50% assistance not exceeding Rs. 12.5/-per sq.mt. Each farmer can avail upto 10000 sq. mts.
4. Seedling Protrays – 50% assistance not exceeding Rs.7.50/-per protray of 99 cells. Each farmer can avail upto 200 No. of protrays.
5. Vegetable Mini kits – 90% assistance per kit of Rs.100/-. Each farmer can avail upto 2 No. of Vegetable mini kits.
6. Permanent Pandals- 50% assistance not exceeding Rs. 100000/-per acre, Maximum eligibility is 1 hectare per beneficiary.
7. Plastic Crates – 50% cost of the equipment subject to the maximum of Rs. 120/- for plastic crate and maximum eligibility of 40 crates/farmer.
8. 75% subsidy on onion seed distribution has been taken up to cover an extent of 14000 acres. Draft Onion Price Stabilization policy submitted to Govt. entire state

**Poly House -State Plan (Under Department of Horticulture of Telangana)**

- Poly Houses are protected structures made up of GI pipes covered with polythene, used for cultivation of high value horticulture crops.
- The Government of Telangana has sanctioned a scheme on establishment of Polyhouses in Telangana under State Plan Schemes during 2014-15, through the Department of Horticulture with the following major objectives.
  - Enhancing productivity per unit area.
  - Promotion of high value Horticulture crops under Poly houses.
  - Year round production of flower & Vegetable crops.
  - To cater to the needs of consumers in Hyderabad & entire state

**Highlights of the scheme:**

- The scheme is implemented with 75% subsidy under Normal State Plan scheme in the entire state for vegetables and flowers
- Beneficiaries are eligible up to min. of 200 sq.mts and max. of 3.00 acres and preferably farmers small farmers with 0.5 to 1.0 acre area
- The farmers are given choice for selection under empanelled companies and registered companies.



**VIUC in Telanagana is Implemented in Telugu Catchy phrase as “Mana Ooru Mana Kuragayalu”**

**Objectives:**

- Vegetable production plan based onv market arrivals of last five years, for availability of vegetables round the year.
- Transfer of technology and ensuringv adoption of technology by farmer.
- Strengthening of Vegetable Value chain creating Marketing linkages in 3 districts i.e. Mahbubnagar, Medak & Ranga Reddy which are main feeders of Hyderabad Market.
- Enhancement of productionv & productivity by adopting best innovative practices

**NEED FOR VIUC IN TELANGANA**

- Population of Hyderabad : 100 lakhs approx.
- Per day requirement (ICMR recomdn.) : 300 g/ day/person
- Annual requirement : 11 lakh tonnes
- Total Annual estimated arrivals in Hyd. city: 7.8 LakhMTs
- There is a gap of 3.2 lakh MTs which needs to be addressed by VIUC intervention

## Horticulture Department of Telangana

### Objective:

- Identify suitable areas for cultivation of various Horticultural crops, motivate, educate and encourage the farmers to take up cultivation of identified crops in large scale.
- To provide latest technologies, Good Agriculture Practices (GAP), quality plant material to the farmers for increasing production & productivity.
- To create awareness on water-use management and cropping patterns.
- Acts as nodal agency for implementation of various Horticultural programmes of State and Central Governments.

### Sri Konda Laxman Telangana State Horticultural University (SKLTSHU)

- Apart from these 11 Research stations which are catering to the research needs in major horticultural crops, there is every need, scope to establish new research station which should cater mainly to the dry land crops as the state is having vast tracts of dry lands and majority of the farming system are under the dry land crops category.
- Further as the demand of chillies and onion are increasing day by day and with the amenability of cultivating potato in Telangana region, there is also need and scope for the establishment of the dedicated research station for chillies and onion and potato.
- Keeping this scenario, the future vision of the SKLTSHU is to establish the following research stations

1. Dry land Horticultural Research Station at Mahaboobnagar district
  2. Chilli and seed spice Research Station, Warangal district
  3. Potato and Onion Research station at Zaheerabad, Medak district
- To further improve the quality of the research work, a state of art PG research center with all the infrastructure and latest equipment is being established at Mulugu, the new headquarters of the SKLTSHU.

### **New Research Stations**

#### **Dry land Horticultural Research Station at Mahaboobnagar**

- Owing to dry climate, Telangana state has highest potential for the increase in the acreage of dry fruit crops like pomegranate, fig, custard apple, ber, anola, wood apple, beal, sapota and guava.
- Under the climate change scenario, growing dry land horticultural crop is the only alternative for improving the economic status of the farmers. More and more farmers are growing dry land horticultural crops instead of regular agricultural crops.
- Growing dry land horticultural crops which has high water use efficiency is the best alternative in the present scenario of climate change stimulated vagaries like drought particularly in Mahaboobnagar district of Telangana.
- However, the Telangana state has very less acreage of dry land crops like custard apple (2759 ha), Pomegranate (765 ha), Sapota (1312 ha), fig and ber (negligible). And hence increasing the acreage of the dry land horticulture crop is the only alternative for increasing the economic status of farmers of Telangana which will ultimately prevent farmers suicide.

- Apart from this new crop introduction like Kinnow, Date palm and Apple ber can also be encouraged in the state as the state is congenial for growing these crops.
- Under these scenario, there is every need to give impetus to dry land horticultural crops by establishing a dedicated Research Station at Mahaboobnagar with mandate crops of pomegranate, fig, custard apple, sapota, ber, anola, wood apple, beal and guava.

### **Chilli and seed spice Research Station of Horticulture of Telangana**

- In Telangana State, chilli (dry) is grown in 9 districts out of 10 districts with highest acreage in Khamman followed by Warangal districts. There is a huge area under green chillies in Medak and Rangareddy districts. The average productivity of chillies is 3 M.t/ha.
- In Warangal district of Telangana, exclusively chapta variety of chilli is grown and framers are getting remunerative price for this variety. Further, the oleoresin content of Telangana chillies is high upto 11.2 %.
- In the undivided Andhra Pradesh, chilli research station located at LAM, Guntur was catering to the needs of the chillie farmers of the state with more emphasis on the location based research specific to Guntur and Andhra Region.
- Now, the area under chilli for green and dry is alarmingly increasing thereby emphasising for need based location specific research on the crop in the state. Hence, an urgent need to establish chilli research station. To this effect land to an extent of 85 acres has already been procured near Warangal.

**Potato and Onion Research station at Zaheerabad**

- In Telangana, potato is grown in Medak (4530 ha and 90760 MT), Rangareddy (394 ha and 7880 MT) and Khammam (1970 ha and 39,400 MT) districts.
- Majority of the potato cultivation (70-80 %) in Medak district is under drip irrigation system, a progressive system of cultivation which is yet to be followed in many of the major potato growing states.
- The productivity of potato in Telangana state is higher than other potato growing states which clearly indicate the potential scope for increasing the thrust on potato cultivation in Telangana State.
- In Telangana, onion is grown in an area of 33851 ha with a total cumulative production of 609318 Mt. Among the district, the leading onion producing district is Mahaboobnagar (153630 MT) followed by Medak (95859 MT). Ginger and garlic areas also increasing in the Telangana region particularly in Medak district.
- There is every need to increase the area of the onion and because of suitable climate condition of Telangana this crop has huge potential in reducing the climate vagaries faced by Telangana farmers.

- However, the farmers are facing certain problems in the procurement of the seed tubers particularly potato and onion, non availability of the location specific suitable varieties adoptable to local conditions, information on fertigation, mechanisation and post harvest storage. Research is lacking on the location specific technologies suitable for the region.
- Hence, there is every need to establish a dedicate Research Station on potato, onion near Zaheerabad, Medak district due to its favourable climatic conditions for these crops and for the benefit of potato and onion farmers of the region and Telangana state at large.

### **National Horticulture Mission (N H M) of India**

- Recognizing the importance of horticulture sector in the growth of Indian agriculture, Honorable Finance Minister announced launching of National Horticulture Mission in his budget speech on July 8, 2004.
- The horticulture sector includes fruit, vegetables, spices, medicinal and aromatic plants, flowers, mushroom and a variety of plantation crops like coconut, areca nut, cashew nut and cocoa which has been contributing significantly to the GDP in agriculture (28.5 per cent form 8.5 per cent area).
- National Horticulture Mission is a centrally sponsored scheme in which Government of India provide 100% assistance to the state mission during the year 2005-06 (During XI plan, the assistance form Government of India will be 85% with 15% contribution by the State Government).

**Objectives:**

To develop horticulture to the maximum potential available in the State and to augment production of all horticultural production of all horticultural products (Fruits, Vegetable, flowers, Plantation crops, Spices, Medicinal Aromatic plants) in the state

1. To provide holistic growth of the horticulture sector through an area based regionally differentiated strategies
2. To enhance horticulture production, improve nutritional security and income support to farm households;
3. To establish convergence and synergy among multiple on-going and planned programmes for horticulture development;
4. To promote, develop and disseminate technologies, through a seamless blend of traditional wisdom and modern scientific knowledge.
5. To create opportunities for employment generation for skilled and unskilled persons, especially unemployed youth;

In pursuance of the above goals, the National Horticulture Mission will focus in the areas of horticultural research, development, post harvest management,, processing and marketing.

## Irrigation and Hydropower of Telangana

### Hydropower in Telangana

#### Hydroelectric Power — what is it?

- It is a form of energy ... a renewable resource.
- Hydropower provides about 96 percent of the renewable energy in the United States. Other renewable resources include geothermal, wave power, tidal power, wind power, and solar power.
- Hydroelectric powerplants do not use up resources to create electricity nor do they pollute the air, land, or water, as other powerplants may.
- Hydroelectric power has played an important part in the development of this Nation's electric power industry.
- Both small and large hydroelectric power developments were instrumental in the early expansion of the electric power industry.
- Hydroelectric power comes from flowing water ... winter and spring runoff from mountain streams and clear lakes.
- Water, when it is falling by the force of gravity, can be used to turn turbines and generators that produce electricity.

#### HOW HYDROPOWER WORKS

- Hydroelectric power comes from water at work, water in motion.
- It can be seen as a form of solar energy, as the sun powers the hydrologic cycle which gives the earth its water.



- In the hydrologic cycle, atmospheric water reaches the earth's surface as precipitation. Some of this water evaporates, but much of it either percolates into the soil or becomes surface runoff.
- Water from rain and melting snow eventually reaches ponds, lakes, reservoirs, or oceans where evaporation is constantly occurring
- Moisture percolating into the soil may become ground water (subsurface water), some of which also enters water bodies through springs or underground streams.
- Ground water may move upward through soil during dry periods and may return to the atmosphere by evaporation.
- Water vapor passes into the atmosphere by evaporation then circulates, condenses into clouds, and some returns to earth as precipitation.
- Thus, the water cycle is complete. Nature ensures that water is a renewable resource.

### **Dams**

- Height of dam and mass of water behind the dam determine useful energy.
- Efficiency is very good to excellent, generally 80 to 90% efficient in converting potential energy to electrical energy.

## Irrigation

### Classification of irrigation projects

Irrigation projects are classified in different ways, however, in Indian context it is usually classified as follows:

- 1. Major project:** This type of project consists of huge surface water, storage reservoirs and flow diversion structures. The area envisaged to be covered under irrigation is of the order over 10000 hectare.
- 2. Medium project:** These are also surface water projects but with medium size storage and diversion structures with the area under irrigation between 10000 hectare and 2000 hectare.
- 3. Minor project:** The area proposed under irrigation for these schemes is below 2000Ha and the source of water is either ground water or from wells or tube wells or surface water lifted by pumps or by gravity flow from tanks. It could also be irrigated from through water from tanks.

The major and medium irrigation projects are further classified as

1. Direct irrigation method
2. Storage irrigation method.

Each of the two classifications is explained in subsequent sections. But before that, it may be worthwhile to discuss here a few terms related to irrigation projects which may also be called irrigation schemes.

## **Direct and Indirect (Or Storage) Irrigation Methods**

### **Direct Irrigation method**

1. In this project water is directly diverted from the river into the canal by constructing a diversion structure like weir or barrage across the river with some pondage to take care of diurnal variations.
2. It also effects in raising the river water level which is then able to flow into the offtaking channel by gravity.
3. The flow in the channel is usually controlled by a gated structure and this in combination with the diversion structure is also sometimes called the headworks.

### **Storage Irrigation Method**

- For this type of irrigation schemes part of the excess water of a river during monsoon which other wise would have passed down the river as a flood is stored in a reservoir or tank found at the upstream of a dam constructed across a river or stream.
- This stored water is then used for irrigation is adopted when the flow of river or stream is in excess of the requirements of irrigated crops during a certain part of the year but falls below requirements or is not available at all in river during remaining part of the year.
- Since the construction site of a storage reservoir is possible in regions of undulating topography, it is usually practiced in non deltaic areas.

### **Irrigation Project Structures**

As might have been noticed from the irrigation scheme plans in the previous section, a number of structures are required for the successful implementation of a project. Some of these are:

#### **Storage structure and appurtenant works**

1. Dams
2. Spillways and energy dissipators
3. Sluices and outlets

#### **Diversion structure and appurtenant works**

1. Barrage (weirs are not commonly used these days for sizeable projects)
2. Canal head regulator
3. River training works
4. Canal water conveyance structures
5. Canal sections and layout
6. Cross regulators
7. Drops
8. Turnouts

### Surface Irrigation Methods

- In this system of field water application the water is applied directly to the soil from a channel located at the upper reach of the field.
- It is essential in these methods to construct designed water distribution systems to provide adequate control of water to the fields and proper land preparation to permit uniform distribution of water over the field.
- One of the surface irrigation method is flooding method where the water is allowed to cover the surface of land in a continuous sheet of water with the depth of applied water just sufficient to allow the field to absorb the right amount of water needed to raise the soil moisture up to field capacity.
- A properly designed size of irrigation stream aims at proper balance against the intake rate of soil, the total depth of water to be stored in the root zone and the area to be covered giving a reasonably uniform saturation of soil over the entire field.
- Flooding method has been used in India for generations without any control what so ever and is called uncontrolled flooding.
- The water is made to enter the fields bordering rivers during folds.
- When the flood water inundates the flood plane areas, the water distribution is quite uneven, hence not very efficient, as a lot of water is likely to be wasted as well as soils of excessive slopes are prone to erosion.
- However the adaptation of this method doesn't cost much.

The flooding method applied in a controlled way is used in two types of

The flooding method applied in a controlled way is used in two types of irrigation methods as under:

1. Border irrigation method
2. Basin irrigation method

As the names suggest the water applied to the fields by this inundates or floods the land, even if temporarily. On the other hand there are many crops which would try better if water is applied only near their root zone instead of inundating.

### **Border irrigation**

- Borders are usually long uniformly graded strips of land separated by earth bunds (low ridges).
- The essential feature of the border irrigation is to provide an even surface over which the water can flow down the slope with a nearly uniform depth.
- Each strip is irrigated independently by turning in a stream of water at the upper end.
- The water spreads and flow down the strip in a sheet confined by border ridges. When the advancing water reaches the lower end of the border, the stream is turned off.
- For uniform advancement of water front the borders must be properly leveled. The border shown in the figures above are called straight borders, in which the border strips are laid along the direction of general slope of the field.

• The borders are sometimes laid along the elevation contours of the topography when the land slope is excessive. This method of border is

- The borders are sometimes laid along the elevation contours of the topography when the land slope is excessive. This method of border is called contour border method of irrigation

## **Basin Irrigation**

- Basins are flat areas of land surrounded by low bunds. The bunds prevent the water from flowing to the adjacent fields.
- The basins are filled to desired depth and the water is retained until it infiltrates into the soil. Water may be maintained for considerable periods of time.
- Basin method of irrigation can be formally divided into two, viz; the check basin method and the ring basin method.
- The check basin method is the most common method of irrigation used in India.
- In this method, the land to be irrigated is divided into small plots or basins surrounded by checks, levees (low bunds)

## **Furrow Irrigation**

- Furrows are small channels, which carry water down the land slope between the crop rows.
- Water infiltrates into the soil as it moves along the slope. The crop is usually grown on ridges between the furrows.
- This method is suitable for all row crops and for crops that cannot stand water for long periods, like 12 to 24 hours, as is generally encountered in the border or basin methods of irrigation

### **Subsurface irrigation methods**

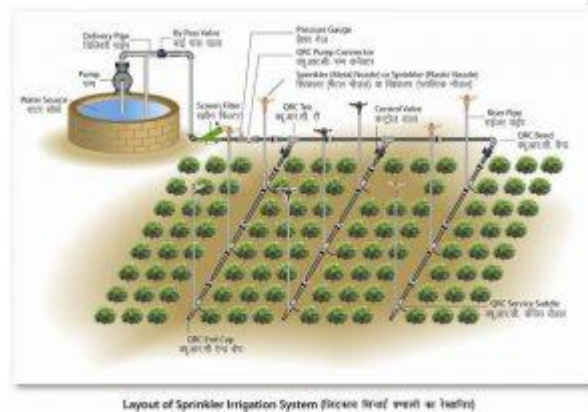
- As suggested by the name, the application of water to fields in this type of irrigation system is below the ground surface so that it is supplied directly to the root zone of the plants.
- The main advantages of these types of irrigation is reduction of evaporation losses and less hindrance to cultivation works which takes place on the surface.
- There may be two ways by which irrigation water may be applied below ground and these are termed as:
  1. Natural sub-surface irrigation method
  2. Artificial sub-surface irrigation method

### **Sprinkler Irrigation System**

- Sprinkler irrigation is a method of applying water which is similar to natural rainfall but spread uniformly over the land surface just when needed and at a rate less than the infiltration rate of the soil so as to avoid surface runoff from irrigation.
- This is achieved by distributing water through a system of pipes usually by pumping which is then sprayed into the air through sprinklers so that it breaks up into small water drops which fall to the ground.
- The system of irrigation is suitable for undulating lands, with poor water availability, sandy or shallow soils, or where uniform application of water is desired.



- No land leveling is required as with the surface irrigation methods.
- Sprinklers are, however, not suitable for soils which easily form a crust.
- The water that is pumped through the pump pipe sprinkler system must be free of suspended sediments.
- As otherwise there would be chances of blockage of the sprinkler nozzles.



## Drip Irrigation System

- Drip Irrigation system is sometimes called trickle irrigation and involves dripping water onto the soil at very low rates (2-20 litres per hour) from a system of small diameter plastic pipes filled with outlets called emitters or drippers.
- Water is applied close to the plants so that only part of the soil in which the roots grow is wetted, unlike surface and sprinkler irrigation, which involves wetting the whole soil profile.
- With drip irrigation water, applications are more frequent than with other methods and this provides a very favourable high moisture level in the soil in which plants can flourish.

### **Telangana Micro Irrigation Project**

- “Each drop of water is precious. Government is committed to giving high priority to water security. It will complete the long pending irrigation projects on priority and launch the ‘Pradhan Mantri Krishi Sinchayee Yojana’ with the motto of ‘Har Khet Ko Paani’.
- There is a need for seriously considering all options including linking of rivers, where feasible; for ensuring optimal use of our water resources to prevent the recurrence of floods and drought.
- By harnessing rain water through ‘Jal Sanchay’ and ‘Jal Sinchan’, we will nurture water conservation and ground water recharge. Micro irrigation will be popularised to ensure ‘Per drop-More crop’

### **TELANGANA STATE MICRO IRRIGATION PROJECT (TSMIP)**

- Micro Irrigation Project (MIP), a unique and comprehensive project, launched in November 2003 with an objective of enhancing the crop productivity by improving the water use efficiency, Fertilizer, Labour efficiency etc., through Micro Irrigation Systems.
- So far in Telangana 5.01 lakh nos of farmers covered with an area of 4.79 lakh ha by utilizing Rs.2074.72 crores up to 2013-14.
- Presently 10.06 lakh ha potential area is available for micro irrigation in Telangana State.
- During the year 2014-15 Micro Irrigation programme is implementing with 55,630 ha (Drip-39,700 ha, Sprinkler – 15,930 ha) in state.

## **Annual Action Plan 2015-16**

- The total net area irrigated in Telangana 17.73 lakhs Ha
- Tanks – 1.50 Lakh Ha.; Canals – 0.90 Lakh Ha; Ground Water – 15.25 Lakh Ha.(86%)
- Area Covered under Micro Irrigation upto 2013-14 4.79 lakhs Ha
- Area to be covered during 2014-15 0.55 Lakh Ha.
- Balance potential area for Micro Irrigation 9.91 Lakhs Ha
- Minium 18 years is required to cover the balance area
- 85% of farmers of the State are SF and MF and are mostly dependent on Ground water irrigation.
- Soils are mostly Chalka and gravel type with poor water retention capacity.
- Keeping in view of the above facts, 1 Lakh Ha.
- Area is proposed in Action plan 2015-16
  1. Drip Irrigation 75,000 Ha +
  2. Sprinklers Irrigation 25,000 Ha
  3. Subsidy Rs.806.25 Crores



**Hydropower Projects in Telangana**

S. No.	Name	District	Basin	River
1	Nagarjunasagar Hydroelectric Project	Nalgonda	Krishna	Krishna
2	Nagarjuna Sagar Tail Pond Hydroelectric Project	Bellary	Krishna	Krishna
3	Nizamsagar Hydroelectric Project	Hyderabad	Godavari	Godavari
4	Pochampad Hydroelectric Project	Nizamabad	Godavari	Godavari
5	Priyadarshini Jurala Hydroelectric Project	Mahabubnagar	Krishna	Krishna
6	Singur Hydroelectric Project	Medak	Godavari	Majeera
7	Srisaillam Hydroelectric Project	Mahabubnagar	Krishna	Krishna

*Nagarjunasagar Hydroelectric Project*

S. No.	Attribute	Value
1	Hydroelectric Project Name	Nagarjunasagar Hydroelectric Project
2	Hydroelectric Project Name Alias	
3	State	Telangana, Andhra Pradesh
4	Districts	Nalgonda
5	River	Krishna
6	Basin	Krishna
7	Hydroelectric Region	Southern HE Region
8	Total Installed Capacity (MW)	968.6
9	Type of Project	Major (> 25 MW)
10	Hydroelectric Project Status	Completed
11	Purpose	Hydroelectric
12	Owner	State
13	Owner Name	APGENCO

# Human Geography of Telangana

## Population of Telangana

### Population of Telangana:

- Telangana is the 29th state of India, formed on the 2nd of June 2014.
- The state has an area of 1,12,077 Sq. Km. and has a population of 3,50,03,674.
- The Telangana region was part of the Hyderabad state from Sept 17th 1948 to Nov 1st 1956, until it was merged with Andhra state to form the Andhra Pradesh state.
- After decades of movement for a separate State, Telangana was created by passing the AP State Reorganization Bill in both houses of Parliament.
- Telangana is surrounded by Maharashtra and Chhattisgarh in the North, Karnataka in the West and Andhra Pradesh in the South and East directions.
- Major cities of the state include Hyderabad, Warangal, Nizamabad and Karimnagar
- The people of the state are predominantly residing in rural areas with 61.12% and the rest of 38.88% are residing in urban areas.
- The overall growth of total population during the decade 2001 to 2011 is 13.58%, whereas it was 18.77% in the preceding decade.
- The growth of the population in urban areas has been witnessing a significant increase.
- Urban population in the State grew by 38.12% during the decade 2001 to 2011 as compared with 25.13% in the preceding decade.

- In sharp contrast, rural population in the state grew by a modest 2.13% as per the 2011 census, which is much higher than the United Nations estimates of world population growth at 1.23%.
- Around 30% of total urban population is residing in the capital city of Hyderabad alone.

## **Sex Ratio of Population of Telangana**

- The sex ratio is defined as the number of females per 1,000 males.
- This ratio for the state is 988 according to 2011 Census.
- One distinguishing feature is that the sex ratio in the districts of Nizamabad, Adilabad, Karimnagar and Khammam is over 1,000.
- The sex ratio has been witnessing an improvement in the State from 967 in 1991 to 971 in 2001 and further to 988 in 2011.
- Despite a favorable sex ratio of the total population, the sex ratio of children in the age group of 0-6 years is declined from 957 in 2001 to 932 in 2011.
- The sex ratio of the SC population at 1,008 in 2011 is much higher than the State average of 988 in all districts, except Rangareddy, Hyderabad and Mahabubnagar districts.
- The sex ratio of ST population at 977 is marginally lower than the State average of 988, but it is higher in Adilabad, Karimnagar, Nizamabad and Khammam districts.



### **Density of the Population of Telangana**

- The density of population is defined, in general, as average number of persons residing per square kilometer of area.
- The density of population in the State ranges from 170 to 18,172 per square kilometer.
- Adilabad district has the lowest density of 170 per sq. kilometer and Hyderabad district with highest density of 18,172 per sq. kilometer.
- The districts of Adilabad, Khammam and Mahabubnagar have lower density of population with 170, 197 and 220 per sq. kilometer respectively, as compared with the State average of 312 per sq. kilometer.

### **Literacy Rate OF Population of Telangana**

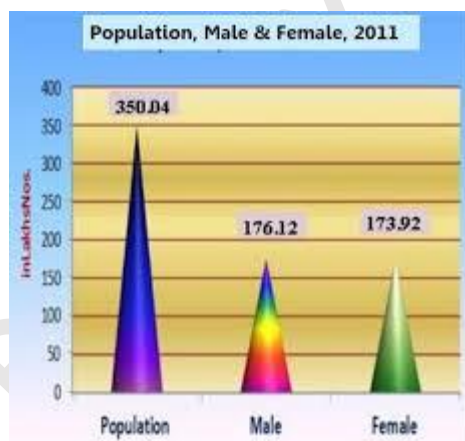
- According to the Census of India, the literacy rate is defined as the total percentage of the population of an area at a particular time, aged seven years or above who can read and write with understanding.
- The literacy rate of the State as per 2011 census is 66.54%.
- Male literacy and female literacy are 75.04% and 57.99%, respectively.
- Hyderabad district is highest with 83.25% and Mahabubnagar district at lowest with 55.04%.

### **Social Composition of Population of Telangana**

- The population of the State consists predominantly of backward classes scheduled castes and scheduled tribes.
- Out of the total population of the State, scheduled castes constitute 15.45% and the scheduled tribes 9.08%.
- There has been a significant increase in the percentage of tribal population in total population from 2.81% in 1961 to 8.19% in 1981 and further to 9.08% in 2011.

## Growth and Level of composition

- Urban population, according to 2011 census, is 136.09 lakhs, whereas it was 98.53 lakhs in 2001, increased by 36% over the decade in the State.
- Hyderabad is a hundred percent urban district but the city of Hyderabad spreads much beyond the district boundary into the neighbouring Rangareddy district.
- This has made Rangareddy, which surrounds Hyderabad, as the next highly urbanized district with 70.22% urban population.



## Population of Telangana Statistics

1	Area	112,077 Sq. Kms.
2	Districts	31
	Population	350.04 Lakhs
3	Male	176.12 Lakhs
	Female	173.92 Lakhs
4	Sex Ratio (Female per 1000 Males)	988 Ratio
5	Density of Population	312 per Sq. Km
6	Decadal Growth Rate (2001-2011)	13.58 Rate
	Rural Population	213.95 Lakhs
7	Rural Population Male	107.05 Lakhs
	Rural Population Female	106.90 Lakhs
8	Rural Population Sex Ratio (Female per 1000 Males)	999 Ratio
9	Rural to Total Population	61.12 %
	Urban Population	136.09 Lakhs
10	Urban Population Male	69.07 Lakhs
	Urban Population Female	67.02 Lakhs

11	Urban Population Sex Ratio (Female per 1000 Males)	970 Ratio
12	Urban to Total Population	38.88 %
	SC Population	54.09 Lakhs
13	SC Population Male	26.93 Lakhs
	SC Population Female	27.16 Lakhs
	ST Population	31.78 Lakhs
14	ST Population Male	16.08 Lakhs
	ST Population Female	15.70
	Child Population (0-6 years)	38.99 Lakhs
15	Child Population (0-6 years) Male	20.18Lakhs
	Child Population (0-6 years) Female	18.81 Lakhs
	Child to Total Population	11.14 %
16	Child Sex Ratio (Female per 1000 Males)	932 Ratio
	Literates	206.97 Lakhs
	Literates Male	117.02 Lakhs
17	Literates Female	89.05 Lakhs
	Literacy Rate	66.54 %
	Literacy Rate Male	75.04 %
	Literacy Rate Female	57.99 %
	Total Workers	163.42 Lakhs
18	Main Workers	137.20 Lakhs
	Marginal Workers	26.22 Lakhs
	Members of Parliament (MPs)	17
19	Members of Legislative Assembly (MLAs)	120

**Some Districts Statics of Population of Telangana**

Name		Status - Population Census 2011-03-01
Adilabad	District	2,741,239
Hyderabad	District	3,943,323
Karimnagar	District	3,776,269
Khammam	District	2,797,370
Mahbubnagar	District	4,053,028
Medak	District	3,033,288
Nalgonda	District	3,488,809
Nizamabad	District	2,551,335
Rangareddy	District	5,296,741
Warangal	District	3,512,576
Telangana	State	35,193,978

## ***National Population Policy***

- As per the latest World Population Prospects released by United Nations (revision 2015), the estimated population of India will be 1419 million approximately whereas China's population will be approximately 1409 million, by 2022.
- In spite of the perceptible decline in Total Fertility Rate (TFR) from 3.6 in 1991 to 2.3 in 2013, India is yet to achieve replacement level of 2.1.
- Twenty four states/UTs have already achieved replacement level of TFR by 2013, while states like UP and Bihar with large population base still have TFR of 3.1 and 3.4 respectively.
- The other states like Jharkhand (TFR 2.7), Rajasthan (TFR 2.8), Madhya Pradesh (TFR 2.9), and Chhattisgarh (TFR 2.6) continue to have higher levels of fertility and contribute to the growth of population.
- The National Population Policy 2000 is uniformly applicable to the whole country. In pursuance of this policy, Government has taken a number of measures under Family Planning Programme and as a result, Population Growth Rate in India has reduced substantially which is evident from the following:-
  - The percentage decadal growth rate of the country has declined significantly from 21.5% for the period 1991-2001 to 17.7% during 2001-2011.
  - Total Fertility Rate (TFR) was 3.2 at the time when National Population Policy, 2000 was adopted and the same has declined to 2.3 as per Sample registration Survey (SRS) 2013 conducted by the Registrar General of India.

## Migration of Telangana

### Migration of Telangana

*"Human development and human rights are enshrined in today's world. But they have not yet become the core values of our reality. The stability and success of any country will not be secure until we are able to spread the benefits in a more equitable manner. The obscene wealth of the few cannot be at the expense of the hungry and the destitute." Reverend Desmond M. Tutu*

- The Constitution of India guarantees freedom of movement for all citizens. The foundational principles of free migration are enshrined in clauses (d) and (e) of Article 19(1) of the Constitution, which guarantee all citizens the right to move freely throughout the territory of India, and reside and settle in any part of the territory of India. Article 15 prohibits discrimination on the basis of place of birth, among other grounds, while Article 16 guarantees equality of opportunity for all citizens in matters of public employment, and in particular prohibits the denial of access to public employment on the grounds of place of birth or residence
- Migration comprises a multitude of physical movements in space and time.
- It is a process which is spatially subdivided into sending areas, routes of migration and receiving areas.
- With regard to the motivations of migrants, three types of migration can be distinguished:
  1. Enforced migration,
  2. Voluntary migration
  3. Distress migration.

- The first is decided upon by external powers. Resettlement programmes of governments for instance fall into this category.
- The second is the outcome of a decision-making process of migrants and their families.
- Migration due to drought, crop failure and famine is, among other causes covered by Distress Migration category. It is impelled by push or distress factors at home such as
  - Lack of employment,
  - Low wage rates,
  - Agricultural failure,
  - Debt,
  - Drought
  - Natural calamities.
- In fact, globalization and liberalization has led to the use of new technology in agriculture resulting in increased unemployment in the countryside.
- Large numbers of the poor in labour and farming communities to migrate from their home to far off places in search of employment and large, internal migrants are unskilled and semi-skilled workers from lower income groups who could be able to improve their economic position or income scale after migration.
- A recent report by UNDP exposed the same that without migration a majority of the poor would not be able to spend on health, consumption and other basic needs, and would face the risk of sliding deeper into poverty.



- The rural poor, labour and marginal and small farming communities are on the move, temporarily leaving their homes in search of employment and livelihood in other prosperous rural and/or urban areas in the country.
- It appears that, the growing part of such migration is temporary, seasonal, circular and cyclical in nature, though destinations may differ.
- Seasonal migration is certainly not a new phenomenon in India. However, the magnitude of rural labour circulation is of recent origin, and is a direct consequence of structural changes of the economy.
- Many of the poor living in underdeveloped areas, seasonal migration and commuting are the only ways of accessing the benefits of growth in other locations.
- Migration has helped them in managing risk, smoothing consumption, and earning to invest in a better future discussed seasonal migration on the basis of three elements:
  1. A lack of alternatives in origin areas which force entire families to migrate in search of work
  2. Work which is based on indebtedness generates little or no surplus for the labourers at the end of the season, and is merely for survival.
  3. Work which involves large-scale violation of labour laws.

- The rural poor, labour and marginal and small farming communities are on the move, temporarily leaving their homes in search of employment and livelihood in other prosperous rural and/or urban areas in the country.
- It appears that, the growing part of such migration is temporary, seasonal, circular and cyclical in nature, though destinations may differ.
- Seasonal migration is certainly not a new phenomenon in India. However, the magnitude of rural labour circulation is of recent origin, and is a direct consequence of structural changes of the economy.
- Many of the poor living in underdeveloped areas, seasonal migration and commuting are the only ways of accessing the benefits of growth in other locations.
- Migration has helped them in managing risk, smoothing consumption, and earning to invest in a better future discussed seasonal migration on the basis of three elements:
  1. A lack of alternatives in origin areas which force entire families to migrate in search of work
  2. Work which is based on indebtedness generates little or no surplus for the labourers at the end of the season, and is merely for survival.
  3. Work which involves large-scale violation of labour laws.
- Seasonal migration as a temporary move from and followed by return to the normal place of residence, for purposes of employment.

### **Official Estimates of Migration of Telangana**

- The two main sources of data on migration are the National Census and the National Sample Survey (NSS) and most estimates of migration are based on these.
- The total population of India at the last Census was over a billion.
- According to the National Census for 2011, 30% of the population or 307 million were migrants.
- Of these, nearly a third had migrated during the previous decade.

### **Causes of Migration of Telangana**

There are numerous causes of migration from rural to urban centers and vice versa or from one region to another. Notable among these are:

1. Social conflicts and social tension
2. Gap in civilization / culture
3. Law and Order situation
4. Inequalities in the available social and economic opportunities and other amenities of life between groups of people and or sectors.
5. Income maximization.
6. Inequitable distribution of benefits of economic development.
7. Social mobility and social status aspirations.
8. Residential satisfaction.
9. Friend and family influences
10. Desire for attaining lifestyle, performance and enjoyment.
11. Development of some sort of complex.

### **PUSH FACTORS**

1. **Economic and demographic** -Poverty, Unemployment, Standard of living, Low wages. Development, High fertility rates, Lack of basic health And education.
2. **Political**- Conflict, insecurity, Violence Poor governance, Corruption & Human right abuses
3. **Social and cultural**- Discrimination based on ethnicity religion and the like.

### **PULL FACTORS**

1. **Economic and demographic** – Prospects of higher wages, Potential for improved, Personal and Professional
2. **Political**- Safety and securities Political freedom
3. **Social and cultural** -Family reunification, Ethnic (diaspora gender, migration) home land. Freedom from discrimination.

### **Nature of Migration of Telangana**

- Rural migrants migrate to villages in Mahabubnagar and Nalgonda districts for agricultural work.
- They engage in cotton and Beedi making at different rural destinations.
- First, they work in the cotton fields till the end of that activity, and then shift from cotton to beedi making in the same village or spend some time in neighbouring villages at the destination place.
- Urban migrants largely migrate towards Hyderabad city in search of work/employment from the village.

- The urban migrants participate in different kinds of work in the city such as construction of buildings, brick-kilns, poultry farms, auto driving, hamali (load & unload labourers), paper collecting and work in private factory/service as labourers.
- Unlike urban destinations, in rural areas there is only a single occupation which is agriculture and allied activities.

### **Social and psychological effects of Migration of Telangana**

- In its simplest terms the migration of a person places him in a situation involving social adjustments greater in degree than he is accustomed to making, and often they are new in kind.
- If the environment he has left is quite similar to that which he enters, his adjustments are few and relatively easy; hence he is not likely to suffer any very serious disintegration of character, nor is he likely to cause much disturbance in the life of the group and the community into which he enters.
- If, on the other hand, the adjustments are many and difficult, because of wide differences in cultural patterns between migrant and native, it is practically certain that the migrants and their families will show a large measure of instability in conduct, often resulting in considerable lawlessness and crime.

- The social controls which the native Concept of Migration population finds fairly adequate to direct conduct are not effective for migrants finds adjustment difficult the receiving community finds the assimilation of the migrant just as difficult, and much mutual antagonism arises.
- It is this conflict of cultural patterns that is of most importance from the social standpoint in considering the consequences of migration, although the economic conflict of migrant and native is also of great importance.
- The hereditary differences between migrant and native are of minor significance unless the migrants are of a distinctly different race which is easily distinguishable by its physical characteristics.

### **Effects of Migration of Telangana**

- Large-scale population mobility and the consequent redistribution of population have a number of economic, social, political, ecological and demographic effects.
- According to Spengler and Myers, "Migration consists of a variety of movements that can be described in the aggregate as an evolutionary and development-dostering process operating in time and space to correct rural-urban, inter-urban and inter-regional imbalances. It may also spread information, when migrants are more skilled than those living in the regions of destitution, and it may break the cake of custom developing migrants and make the latter a dynamic force".

**Consequences of Migration of Telangana:**

- **Urbanization:** Migration aids in Urbanization. Thomson also viewed urbanization in the form of migration. Preston considers rural urban migration as an indicator of regional and sectoral distortions in the pattern of development. The UN also estimated that about 60 per cent of the urban growth in developing countries is due to the rate of natural increase of urban areas and the remaining 40 per cent is due to migration. Migration is the chief mechanism by which all the world's greatest urbanization trends have been accomplished.
- **Rural depopulation:** Migration to urban areas results in rural depopulation. As most of the productive work force leaves rural areas in search of better opportunities the rural areas are left behind with the old and the unable.
- **Social status:** Migration is helpful in equalizing social status, income of rural urban settlements, checking fragmentation of land holdings and promotes concept of division of labour and specialization. Migration also helps in cultural diffusion and cultural assimilation as peoples from diverse cultures settle and in due course of time they share and exchange their cultural values and ethos thus helping in cultural diffusion.
- **Remittances:** Income sent home in the form of monetary assistance can help in paying the debts, increasing food security, help diversify livelihoods and to reduce vulnerability associated with shocks

**Case Study for the Mahaboobnagar District Migration of Telangana:**

- Mahabubnagar is more of a traditional type of Caste society with the dominant Reddy Caste controlling the land and the villages through Gram Panchayat and the traditional village administrative system called Patel-Patwari system. From the 1980s onwards, the conditions started changing with increasing opportunities for education and employment outside the village.
- In most of the Telangana region, OBCs have emerged as an economic and political force due to these opportunities and the reservations enjoyed by them in the local bodies.
- With the enactment of 73rd Constitutional Amendment Act in 1993 it gave further scope for members from marginalized communities to enter the citadels of power and expand their political class.
- Economy of the district is backward and primarily agricultural.
- Out of a total geographical area of 18.47 lakh hectares, 14.13 lakh hectares is cultivable land and 2.68 lakh hectares is forest land.
- It has an irrigated area of only 1.47 lakh hectares and the accounts for only eight per cent of the total land and ten per cent of the cultivable area.
- As mentioned earlier, the district is severely drought prone and its agriculture is mainly rain fed.
- But the region is close to Hyderabad and migration takes place on a large scale not only to Hyderabad but also to the other parts of the country.
- Migrants are mostly employed in construction labour in large scale projects like dams and highways.



### **Concluding Remarks**

- Migration of Telangana and related issues are one of the major thrust of research now a day.
- In spite of number of studies have been conducted still there is a lot issues related to the migration has not been addressed.
- The main cause and concern behind the Migration of Telangana is the economic factor; so agriculture and non-farm sector at rural landscape should be given the top priority to control migration.
- Hence, the government should kick off inclusive rural policies through which credit support and rights based service delivery and other services can be assured to the target demography.
- Rural-urban migration can be controlled on a large scale if the government will provide all kind of support to the rural migrants for getting their livelihoods and provide them basic amenities for a descent standard of living at the rural areas as like as its urban counterpart.
- The government should develop public policy by integrating social inclusion in milieu of rural diversity for the wellbeing of all the segments of rural community.

## Schedule Tribes of Telangana

### Schedule Tribes of Telangana

- Based on 2011 Census total population of India is **08 Crore** out of which ST population is **10.45 Crore (8.6%)**.
- The tribal communities in India are enormously diverse and heterogeneous. There are wide ranging diversities among them in respect of languages spoken, size of population and mode of livelihood.
- The number of communities that find their place in the list of the Schedule of the Indian constitution is reflective of this diversity. The Government of India, in its Draft National Tribal Policy, 2006 records 698 Scheduled Tribes in India.
- As per the Census of India 2011, the number of individual groups notified as Scheduled Tribes is 705
- Scheduled Tribe population in the State, which accounts for 9.08 percent of the total population (as per 2011 census), which is significantly higher compared to the percentage of 6.99 STs in the combined State of AP.
- In According to 2011 Census and Ministry of Tribal Affairs Reports the Tribal Population of Telangana

## Schedule Tribes of Telangana

<b>Total Population of Telangana</b>	<b>35193978</b>
Total Population of ST in Telangana	3286928
Percentage of ST population in Telangana	9.3%
% STs in the State to total ST population in India	3.1%
Sex Ratio in STs (Gender Composition of Scheduled Tribe Population) in Telangana	980
Literacy Rates of ST Population in State	49.5%

**Total Schedule Tribes of Telangana that included in Constitutional List of Scheduled tribe by Government of India through President order with Name like**

- Andh, Sadhu Andh
- Bagata
- Bhil
- Chenchu
- Gadabas, Bodo Gadaba, Gutob Gadaba, Kallayi Gadaba, Parangi Gadaba, Kathera Gadaba, Kapu Gadaba
- Gond, Naikpod, Rajgond, Koitur
- Goudu
- Hill Reddis
- Jatapus
- Kammara
- Kattunayakan
- Kolam, Kolawar
- Konda Dhoras, Kubi
- Konda Kapus
- Kondareddis
- Kondhs, Kodi, Kodhu, Desaya Kondhs, Dongria Kondhs, Kuttiya Kondhs, Tikiria Kondhs, Yenity Kondhs, Kuinga
- Kotia, Benthoriya, Bartika, Dulia, Holva, Sanrona, Sidhopaiko
- Koya, Doli Koya, Gutta Koya, Kammara Koya, Musara Koya, Oddi Koya, Pattidi Koya, Rajah, Rasha Koya, Lingadhari Koya (ordinary), Kottu Koya, Bhine Koya, Rajkoya

- Kulia
- Manna Dhora
- Mukha Dhora, Nooka Dhora
- Nayaks (in the Agency tracts)
- Pardhan
- Porja, Parangiperja
- Reddi Dhoras
- Rona, Rena
- Savaras, Kapu Savaras, Maliya Savaras, Khutto Savaras
- Sugalis, Lambadis, Banjara
- Thoti (in Adilabad, Hyderabad, Karimnagar, Khammam, Mahbubnagar, Medak, Nalgonda, Nizam abad and Warangal districts)
- Yenadis, Chella Yenadi, Kappala Yenadi, Manchi Yenadi, Reddi Yenadi
- Yerukulas, Koracha, Dabba Yerukula, Kunchapuri Yerukula, Uppu Yerukula
- Nakkala, Kurvikaran

### **State List of the Particularly Vulnerable Tribal Groups f Schedule Tribes of**

#### **Telangana**

PVTGs, currently including 75 tribal groups, have been identified as such on the basis of the following criteria:

1. Forest-dependent livelihoods,
2. Pre-agricultural level of existence,
3. Stagnant or declining population,
4. Low literacy rates
5. A subsistence-based economy.

As currently there is **the list include both Andra Pradesh and Telangana PVTG together that is**

1. Bodo Gadaba
2. Bondo Poroja
3. Chenchu
4. DongriaKhond
5. GutobGadaba
6. KhondPoroja
7. Kolam
8. Kondareddis
9. KondaSavara
10. KutiaKhond
11. ParengiPoroja
12. Thoti

### **States List of Scheduled Areas**

- The Fifth Schedule (Aarticle 244(1)) contains provisions relating to the administration of Scheduled Areas other than in Northeast India.
- First, areas can be designated Scheduled Areas on the order of the President, who can similarly declare that certain parts of/entire Scheduled Areas cease to be such.
- Second, the Governor of each State having Scheduled Areas shall annually, or whenever required by the President of India, submit a report to the President regarding the administration of Scheduled Areas.

- Currently, certain parts of nine States of the country are covered by the Fifth Schedule. The broad list of Scheduled Areas of Telangana is as follows:

Information regarding Scheduled Area included in Below Image

### *Profile of Schedule Tribes of Telangana*

#### *Numerically dominant Tribal Groups*

##### **Lambada :**

- The Lambadas are the major dominant tribal group inhabiting through the Telangana State. They are also known as Banjara. Their population according to 2011 census is 20,46,117

##### **Koya :**

- The Koyas mainly inhabit the hilly areas of **Khammam and Warangal districts** and are sparsely found in Adilabad and Karimnagar districts of Telangana. Their population as per 2011 Census is 4,86,391.

##### **Gond :**

- Gonds are one of the dominant tribal groups found in Adilabad District of Telangana. The Naikpod is mentioned along with Raj Gonds in the approved list of STs. But in tribal areas of Adilabad District, Naikpod is a separate tribe. Population of Gonds including Naikpods in Telangana as per 2011 census is 2,97,846.

**Yerukala :**

- Yerukala tribe is also found throughout Telangana State. They call themselves 'Kurru'. They are called 'Yerukula' after their women's traditional profession of fortune telling ((Eruka chepputa. Their population according to 2011 census is 1,44,128.

**Pradhan :**

- Pardhans inhabit the tribal areas of Adilabad district of Telangana. They are traditional bards to Gonds and perform mythologies, folk tales and songs of their gods and goddesses at various festivals, ceremonies and fairs for which service they are paid in cash or kind. Their population according to 2011 census is 24,776.

**Primitive Tribal Groups Profile in Schedule Tribes of Telangana**

**Kolam :**

Kolams are predominantly found in tribal areas of Adilabad district of Telangana. They live in exclusive settlements in interior forests and mountainous tracts. Their population according to 2011 census is 44,805. They speak their own dialect called 'Kolami'.



**Chenchus :**

The food gathering and hunting tribe of Telangana constitute their traditional habitat the foot hills of Nallamalai spread in Mahabubnagar and Nalgonda Districts and also found in few villages of Ranga Reddy District of Telangana. Their population according to 2011 census is 16,912 and recognised as PVTG by Govt. of India in the year 1975-76.

**Konda Reddi :**

Konda Reddis inhabit on the banks situated on either side of the Godavari river and in the hilly/forest tracts Khammam district. Their population as per 2011 Census is 7,997. They are recognized as PVTGs by Govt of India in the year 1980.

**Thoti :**

Thotis are living in the districts of Adilabad, Karimnagar and Nizamabad of Telangana. According to 2001 census, their population is 4,811. Thotis are recognized as Primitive Tribal Group. They are recognized as PVTGs by Govt of India in the year 1983.

**Tribal Sub Plan of Schedule Tribes of Telangana**

- After the formation of the new State of Telangana on the 2nd June, 2014, the State Government has attached top-most priority for the development of Scheduled Tribe population in the State, which accounts for 9.08 percent of the total population (as per 2011 census), which is significantly higher compared to the percentage of 6.99 STs in the combined State of AP.
- Many innovative schemes have been planned by the Departments concerned for the all-round development of tribal population in the State.
- To improve the delivery mechanism of Government Welfare Schemes, it is proposed to convert Tribal Thandas into Gram Panchayats.
- Many innovative schemes like kalyana lakshmi, Komaram Bheem memorial are being taken up.
- As per the provisions of the Scheduled Castes Sub Plan and Tribal Sub Plan Act, 2013, while preparing the Annual Plan for 2014-15, 2015-16, 2016-17 and 2017-18 necessary care has been taken to ensure earmarking of required funds for Scheduled Tribes Sub Plan.
- Scheduled castes, Scheduled Tribes Special development fund (planning, allocation, utilization of financial resources) Act-2017 has been enacted by Telangana legislative in March-2017.
- Strategy commenced from 1975 onwards by Government of India during 5th five year plan.
- SCSP and TSP Act, 2013 (Act 1 of 2013) was enacted by the 11th Session of 13th Legislative Assembly which came into effect from 25.01.2013, envisaging equitable development and focus for STs living Scheduled Areas

# **Economic Geography of Telangana**

## Tourism of Telangana

### Major Cities and Tourist Places of Telangana

- Telangana, the 29th and youngest state of India, formally recognized on June 2, 2014 is a treasure trove of tourist destinations.
- One of the largest states in South India, Telangana is known for its hospitality and multicultural and pluralistic society.
- Hyderabad, the capital city of this state is the fifth largest city in India and home to some of India's best educational institutions, public sector and defence companies and a thriving global services sector and film industry.
- The region achieved statehood after a prolonged struggle and is known for its unique culture, dialect, cuisines and other aspects.
- Constituting a major part of Deccan plateau, Telangana has a pleasing climate, with abundant natural and water resources.
- The state is the gateway to Krishna and Godavari Rivers in South India and is considered the seed capital of India.
- The other districts of Telangana namely Adilabad, Nizamabad, Warangal, Khammam, Karimnagar, Nalgonda, Medak, Rangareddy and Mahabubnagar represent the rural diversity and exquisite richness of Telangana.
- One of the wealthy economies in India, Telangana is here to take its rightful place in the country, as a highly developed state and society with a proud history and grand heritage.

### **Getting Around the City**

- Telangana's capital city Hyderabad is well-connected to other district headquarters and tourist destinations through key national and state highways.
- The extensive road network of Telangana offers a hassle free experience for tourists.
- Telangana is a popular destination for tourists not just from around the country, but also from around the world.
- In order to serve the needs of the tourists better, the tourism department operates an efficient network of tourist buses.
- The services offered by Telangana Tourism are of highest standards, for the safety and convenience of travellers.
- The Transport Vehicles of Telangana Tourism are reliable, safe and well-maintained.
- The transport vehicles of Telangana Tourism offer a stress-free travel experience to all the visitors.
- The Telangana State Tourism Department Corporation operates super luxurious Benz and Volvo buses for the convenience of the travelers.
- The Tourism Department also provides travelers an option of customizing their tours to fit into their budget. Apart from the Benz and Volvo busses, there are also Innova Vehicles for the tourists to reach their destinations quickly and safely.
- For package and luxury tourists, the tourism corporation offer high-end caravans that offer a sophisticated touch for an ideal holiday.

**Top 10 Major Tourist Destinations and Tourism Districts of Tourism of Telangana**

**Hyderabad**

- Hyderabad, the capital and the largest city of the State of Telangana and also the capital of the State of Andhra Pradesh till the next capital are determined.
- The place is rich with historic and urban structures.
- The city is also a home to the 'Telugu Film Industry 'or 'Tollywood', which is the second largest producer of motion pictures in India.
- Monuments like Charminar, marketplaces, cuisines, the town of Hyderabad is a must visit.

Famous Place in and around city:

- Charminar
- Golconda Fort
- Makkah Masjid
- Old City.
- Salarjung Museum
- Qutb Shahi Tombs
- Hussain Sagar Lake
- Birla Mandir
- Chowmahalla Palace
- Ramoji Film City
- Spanish Mosque
- Paigah Tombs
- Chilkoor Balaji Temple
- Nehru Zoological Park
- Shamirpet

## Warangal

- The district lies not very far from the Capital city of Hyderabad and is one of the largest cities in Telangana.
- Warangal enshrines a huge number of ancient temples and monuments.
- The Pakhal lake is a must visit.
- The thousand pillar temple here is a historic marvel to behold and will ensure one to note it down in their bucket lists for this city.

### **Famous Place in and around city:**

- Warangal Fort
- Thousand Pillar Temple
- Pakhal Lake
- Eturnagaram Wildlife Sanctuary
- Kakatiya Rock Garden
- Kakatiya Musical Garden
- Bhadrakali Temple
- Ramappa Lake

## **Nizamabad**

- Located by the River Godavari, Nizamabad is also a major city in the State of Telangana.
- The town is famous for its various temples and historical monuments.
- The Pocharam Wildlife Sanctuary is located next to the Pocharam Lake in Nizamabad and contains a rich flora and fauna.
- The Nizamabad fort is also a great place to visit.

Famous Place in and around city:

1. Nizamabad Fort
2. Alisagar Reservoir
3. Pocharam Wildlife Sanctuary
4. Archaeological And Heritage Museum
5. Pochampad Dam
6. Nizam Sagar Dam
7. Mallaram Forest
8. Kanteshwar



### Karimnagar

- Karimnagar is located by a tributary of the Godavari River and is located at an approximate distance of 165 kilometers.
- The city is famous for its various historical forts owing to it being under the Nizam's reign.
- The Elgandal fort is a great place to visit due to its great location.
- The town is also famous for its various pilgrimage spots with some really amazing temples.
- The city is the 4th most populated city in the State of Telangana.

Famous Place in and around city:

1. Elgandal Fort
2. Manthani Temples
3. Jagtial Fort
4. Ramagiri Fort
5. Ujwala Park
6. Rajiv Deer Park
7. Vemulawada
8. Kaleshwaram

### **Khammam**

- The city's name 'Khammam' owes to the local derivation of the name of hill located in this area.
- The Godavari River covers an area of 250 kilometers in this area from the Warangal district.
- This is also rich in coal minerals and called the 'Coal Town of South India'.
- The town is famous for its lakes, forts, temples and hot springs.
- The Kinnerasani Wildlife Sanctuary is a great place to visit which houses animals like tigers, pythons, jackals etc.

Famous Place in and around city:

1. Khammam Fort
2. Kinnerasani Wildlife Sanctuary
3. Kallur
4. Lakaram Lake
5. Nelakondapalli
6. Sri Venkateshwara Swamy Temple
7. Perantalapalli
8. Gundala

### **Adilabad**

- Adilabad is the second largest city in Telangana and is known for its handicrafts.
- The area is distinguished from the Karimnagar and Nizamabad districts by the River Godavari.
- The Kawal wildlife sanctuary is a home to wildlife species like the tiger, panther, crocodiles etc.
- The town is also known for its various waterfalls and parks.
- A great place to visit would be the Basar Saraswati Temple which is situated at the banks of the Godavari River.

### **Famous Place in and around city:**

1. Kuntala Waterfalls
2. Kawal Wildlife Sanctuary
3. Pochera Waterfalls
4. Pranahita Wildlife Sanctuary
5. Mahatma Gandhi Park
6. Sivaram Wildlife Sanctuary
7. Kala Ashram
8. Basar Saraswathi Temple

### **Mahbubnagar**

- It is located at a distance of around 100 kilometers from the capital Hyderabad.
- Mahbubnagar was the core of the Satavahanas and the Chalukya Dynasties reign and was also a part of the Princely state of Hyderabad.
- The town is famous for various palaces and ancient temples.
- A major tourist attraction is the 'Peerlamarri' which is a 800 years old banyan tree and its underlings are spread across 3 acres of land.

### **Famous Place in and around city:**

1. Farahabad
2. Pillalamarri
3. Alampur
4. Gadwal
5. Mallelatheertham

### **Medak**

- Medak is famous for its rock paintings that date back to the Neolithic era.
- The Narsapur Forest is a great place to visit especially for the wildlife enthusiasts. The Devnoor Village is a beautiful village which is located by the Manjira River and is a great place to visit.
- The Manjira Wildlife Sanctuary is also a great place to visit and is a home to a variety of migratory birds and crocodiles.
- The Medak cathedral is a monolithic church of the Methodist Christian sect and the second largest Diocese in the world.
- The gothic styled architecture is a marvel to behold.

### ***Famous Place in and around city:***

1. Medak Fort
2. Medak Cathedral
3. Pocharam Wildlife Sanctuary
4. Edithanur Cave
5. Archaeological Museum



## Nalgonda

- The city of Nalgonda is located between two hills and is known for its various hill forts.
- The rivers Krishna, Musi River, Aleru, Peddavagu, Dindi and Paleru flow through the city and enrich it with various natural resources.
- The World's largest masonry dam, Nagarjuna Sagar is located in this city and is a major source of irrigation in the region.
- The town is also famous for its old temples and monuments.

### **Famous Place in and around city:**

1. Deverakonda Fort
2. Bhongir Fort
3. Rachakonda Fort
4. Mellachervu
5. Pillalamari
6. Nagarjuna Sagar Dam
7. Ethipothala Waterfalls
8. Kolanupaka



### Rangareddy

- Rangareddy was formed in 1978 when it split from the Hyderabad district.
- The town is basically a rural district and is famous for its temples.
- Ananta Padmanabhaswamy Temple is a major tourist attraction here.
- The Osman Sagar Lake is also a great place to visit.
- The town however has fewer attractions than the rest of the cities in Telangana and due it being close to Hyderabad can be covered in a day.

### **Famous Place in and around city:**

1. Ananthagiri Hills
2. Maheshwaram
3. Osman Sagar Lake
4. Keesaragutta Temple
5. Shamirpet Lake View



**JOIN CHANNEL**

## **Transport network in Telangana**

### **Road Transport network in Telangana**

Telangana is the 29th (the newest) state of India, coming into existence on June 2, 2014. Earlier it was a part of the state of Andhra Pradesh. It comprises of an area carved out of the ten north-western districts of the former state of Andhra Pradesh, which are Adilabad, Nizamabad, Karimnagar, Medak, Warangal, Khammam, Rangareddy, Hyderabad, Nalgonda and Mahbubnagar. The region shares its border in the North and North-West with that of Maharashtra. To its West lies Karnataka, while Chhattisgarh occupies its North-East side. To the East, it is surrounded by Odisha.

### **National Highways in Transport network in Telangana**

Around 6 national highways form a large network of roads in the state. These highways interconnect every district, making journey from one town to another a smooth affair. The longest national highway that crosses Telangana is NH7, which enters the state from its North, starting from Adilabad and going on to Mahbubnagar before exiting the state on its South. Along the way it touches the important districts of Nizamabad, Medak, Rangareddy and Hyderabad, the capital of the state. The Hyderabad city would serve as the joint capital of both Telangana and the rest of Andhra Pradesh for ten years.



NH9 crosses the state, surpassing Hyderabad, Medak, Nalgonda and Rangareddy along its way. In Andhra Pradesh it passes through Zahirabad, Suryapet, Narketpally, Vijayawada, Kodad and Machilipatnam. NH16 in the state passes through the important towns of Karimnagar, Adilabad and Nizamabad. This national highway crosses NH7 at Nizamabad before ending at the district HQ. NH222 is the shortest of all the national highways in the state which touches only Adilabad district of the state. NH202 stretches from Hyderabad to Warangal. NH221 is another important national highway that passes through Khammam.

### **Railway Transport network in Telangana**

Telangana comprises of districts that are well connected by rails that run all across the state. The map of Telangana shows various stations and railway routes that connects various places in the state. These routes are helpful in guiding a traveler to his destination. The state is not only well connected inter state but also intra state. As the state has been carved out of Andhra Pradesh which was already well connected with other states in the country, Telangana stands to benefit from it. People residing in the state can also enjoy a better rail connectivity for other states, which mean that they can visit other states without any hassle. The already well laid out rail connectivity in the state is surely going to play a significant role in propagating commerce and tourism in the state. Telangana rail network connects all its major districts namely Adilabad, Nizamabad, Karimnagar, Medak, Warangal, Khammam, Rangareddy, Hyderabad, Nalgonda and Mahbubnagar.

The major railway stations in the state are Adilabad, Nizamabad, Karimnagar, Mancherial, Warangal, Janampeta, Hyderabad, Khammam, Nalgonda, Mahbubnagar and Kurnool.

### **Airways Transport network in Telangana**

#### **Rajiv Gandhi International Airport**

Rajiv Gandhi International Airport is an international airport that serves Hyderabad, the largest city in the Indian state of Telangana. It is located in Shamshabad, about 24 kilometres south of Hyderabad. The airport is operated by GMR Hyderabad International Airport Ltd, a public-private venture. It was opened in March 2008 to replace Begumpet Airport as the primary commercial airport for Hyderabad. It is named after Rajiv Gandhi, former Prime Minister of India. The airport has one passenger terminal, a cargo terminal and two runways. There are also aviation training facilities, a fuel farm, a solar power plant and two MRO facilities. As of 2017 April, RGIA is the sixth busiest airport by passenger traffic in India. The airport served 15.1 million passengers between 2016 April – 2017 March. The airport serves as a hub for Air India Regional, Blue Dart Aviation, SpiceJet, Lufthansa Cargo and Trujet, and as a focus city for IndiGo.

## Begumpet Airport

Begumpet Airport at Hyderabad, also known as Hyderabad Old Airport, is a civil enclave located in Begumpet. The airport is home to the Rajiv Gandhi Aviation Academy (RGAA) and the Begumpet Air Force Station of the Indian Air Force. The Navigation Training School of the Training Command, Indian Air Force, formerly known as the Navigation and Signals School (N&SS), is based here. Begumpet used to be International and Domestic airport of Hyderabad, until the opening of the Rajiv Gandhi International Airport on 23rd March 2008 after which Begumpet ceased all commercial civil operations. The last commercial flight to take off was Thai Airways International flight TG 330 to Bangkok on 22 March 2008. Begumpet is now used for military aviation training and for flights carrying VIPs[citation needed].The Civil Aviation Ministry has put the proposal of starting an ATC training centre in the Begumpet Airport.



**JOIN CHANNEL**

## **Warangal Airport**

Warangal Airport is located at Warangal in the state of Telangana, India. It remained in service until 1981.

Warangal Airport, the largest pre-independence era airport, was built at Mamnour in Warangal district, in 1930. It was commissioned by the last Nizam, Mir Osman Ali Khan, along with one at Sholapur, to benefit the businesses, at Sirpur Kaghaznagar for the paper industry's convenience, and to help industries like the Azam Zahi mills at Warangal. Numerous PMs and Presidents have landed at the airport until 1981, and during the Indo-China war, it served as a hangar for government aircraft due to Delhi airport being a target in combat. Many cargo services and Vayudoot services have also used it as their hub.

## **Ramagundam Airport**

Ramagundam Airport is serving the city of Ramagundam, in the state of Telangana, India. This airport is located close to Basanth Nagar Kesoram cement factory. It was used when the Government of India was operating Vayudoot a subsidiary of Air India and Indian Airlines. After the closure of Vayudoot, it has not been regular use. As of 2010, it is only used for landing of any VIP's flights or for emergency landing of flights. The State Government is planning to develop this airport as a part of developing a third airport in Telangana.

## **Natural and Power Resources of Telangana**

Telangana locale has rich characteristic assets. 10 for every penny of the nation's coal stores in the nation are likewise found here.

Minerals are of incredible monetary esteem and have possessed a trademark put among all the financial assets. Minerals and mineral ventures have huge large scale joins with the economy of a nation.

Mining action produces business openings; is clearly an imperative wellspring of expense income and adds to national wage in this way prompting financial development. In perspective of the essentialness minerals-hold in Telangana, the paper makes an endeavor to drill down all the mineral events of the State and the path forward for financial development.

The recently isolated Telangana state from the condition of joined Andhra Pradesh has a novel topographical set up that can have an assortment of mineral stores of monetary esteem.

The state Telangana has a territory of 112955 Sq.Km, limited by N scopes 15o 46' and 19o 47'and E longitudes 77o16' and 81o43' . Despite the fact that few open associations have found different mineral stores, still there exists a gigantic degree for additionally nitty gritty investigation looking for new mineral stores in the state and contribution of private/multinational organizations has been begun just in the most recent decade.

There is noteworthy mineral potential that still lay undiscovered in Telangana for the development of mining industry. Since a different State has been framed, a deliberate administrative and authoritative methods, framework offices prompting economical investigation and mining action should be planned. The difficulties like absence of adequate water stockpiling frameworks, foundation and so on have constrained the general interest in mining and investigation exercises in the state for as far back as couple of decades.

The Singareni Collieries Company Limited uncovers coal from these mines for mechanical necessities and warm power stations.

Telangana is additionally rich in limestone stores that take into account bond production lines. Telangana has other mineral assets like bauxite and mica.

The best three locale as far as mining income are from Telangana. That is an incredible 79% of the income from top 5 mining regions originates from Telangana. On the off chance that this is the circumstance now, envision what might happen when income from Bayyaram Iron Ore mines, which is evaluated at a few lakhs of crores, begins coming in.

With immense stone stores in Ranga Reddy area and kimberlite pipe (precious stone) stores in Mahbubnagar region, Telangana is a mineral rich state and has gigantic degree for mineral based businesses, opined geophysicists.

Not simply rock and kimberlite pipe stores but rather Telangana have press metal, feldspar, quartz, among different stores in Telangana.

A class to examine the most recent patterns in geophysical investigation was held in Hyderabad on Saturday. Geophysicists and research researchers talked about the mineral sources accessible in Telangana on the event.

Both the examination ventures embraced up by Geophysics division at Bayyaram for press mineral and in Mahabubnagar area for kimberlite channels will be finished in two months, said Ram Raj Mathur, teacher of Geophysics, who is a piece of the group directing an investigation on kimberlite pipe stores.

Telangana, then again, incorporates Hyderabad and the rich mineral belt in its northern regions of Adilabad, Khammam, Karimnagar and Warangal.

So how does Telangana oversee it? Despite the fact that it has less ripe land, it has far wealthier mineral assets. This has additionally empowered the development of industry in the state. The way that there is an extensive extent of no man's land and lower extent of woodlands will empower it to increase both mining and mining-based industry. However, Telangana's most critical resource is Hyderabad and every one of the advantages that the catchment areas of Rangareddy and even past can get from it.

The Singareni Collieries Company Limited (SCCL) has created the most elevated ever generation of 27.20 million tons (MT) of coal amid the principal half of 2015-16 against focus of 25.09 MT with 108 for every penny accomplishment. It recorded 27.46 for each penny development over earlier year generation of 21.34 MT amid a similar period.

It has dispatched 28.34 MT coal to its clients recording 14.55 for each penny development over earlier year amid same period. The supply of 24.74 MT was the most elevated ever dispatch by the organization till now. SCCL when all is said in done met the necessity of energy utilities, hostage control plants, bond and different ventures. This year exhumed overburden is 139.99 M.Cu.m as against focus of 131.76 M.Cu.m.

This speaks to 106 for every penny increment over a year ago unearthing of 113.71 M.Cu m. In the mean time, the Coal India enrolled 8.9 for every penny development with generation of 229.54 MT coal amid first half year "SCCL is making every essential walk for increment and supply of coal to control units in Telangana for all round advancement of the State.

## **Conclusion**

Telangana state is blessed with an assortment of mineral events introduce in various topographical conditions. The mining operations are constrained to just couple of vital minerals as of now.



The requirement for a very much arranged program of study and investigation, straightforward framework in granting surveillance, prospecting and mining licenses, administration of assets which have just been found and those which are currently disclosure and their ideal, practical and convenient utilize are the issues of essential significance requiring thorough arranging, sufficient subsidizing and composed fruitful execution and setting up mineral based enterprises like manures, glass, abrasives and stubborn's and so on. Such kind of creative perspective will help boosting financial development, by the mineral and mining division, in the recently isolated Telangana state.

**Chromite:** In the Khammam locale the mineral happens for the most part as buoy metal. In spite of the fact that at places it is seen in situ as lenticular pockets in ultrabasic rocks like pyroxenite, serpentinite and so on. In areas close Bhimavaram, Gauraram, Jannavaram and Imamnagar and Enkuru an aggregate of 2,500 tons of buoy and couple of hundred tons of in situ mineral are evaluated for these events. This zone merits advance investigation for chromite as well as for minerals of platinoid gathering. Copper: Copper mineralisation is seen in the Mailaram range of Khammam locale in Dharwar quartz-chlorite schist's, encroached by dark and blue quartz veins with Cu% between 1.5-1.7. Chalcopyrite happens as spreads and stringers related with pyrite and pyrrhotite. According to GSI the zone of copper mineralisation stretches out for a strike length of 800 m with a hold of 0.814 metric tons.

At Venkatapuram, chalcopyrite related with pyrite and pyrrhotite is seen in minor veins of quartz navigating the Pakhal quartzites and dolomites and in the quartz-chlorite schists of the Dharwars holding a mineralised zone extending in thickness from 1.5 to 5.30 m. for a strike length of 200 m. The Cu content reaches from 0.64 to 1.58 for each penny. Signs of inadequate Cu mineralisation are likewise seen close Banjar, Mainkawaram, Rabingudem, Sarkal and Yellambailu. In current situation of copper metal costs, this range merits encourage investigation with cutting edge innovation. Gold: Alluvial gold is said to have been worked from close to the intersection of Kinnerasani waterway with the Godavari in the Khammam area and furthermore close Mangampet in the Warangal region. Recently, investigation action by GSI is being done to test the gold potential in Atkur Block, Gadwal Schist Belt, Mahbubnagar locale.

**Press mineral:** Isolated patches of united magnetite quartzites happen close Chityal, Kallada, Dasturabad and Robanpalli, Lakshettipet and Utnoor in the Adilabad area generally as NW-SE slanting BIF groups. Around 16 million tons of poor quality mineral are evaluated here. In the Khammam area press mineral stores exist between Cheruvupuram, Bayyaram and Navapadu and Kothagudem. These are extensively ordered into press metal related with Pakhals and iron-metal related with grouped hematite quartzite of Dharwar age. The stores of first gathering are wealthier and bigger. The aggregate save around there on the premise of a preparatory examination has been assessed at 11 million tons.

The slope 1905 around 5 km. north of Bayyaram, contains two groups of high review press metal one of the groups having a normal thickness of 6 m. is assessed to contain 1,06,000 tons of high review metal and 6,00,000 tons of poor quality metal. The other band with a normal thickness of around 15 m. is assessed to contain 72, 60,000 tons of all evaluations of mineral. Along the northern flank of the slope, hold of 6,25,000 tons of high review metal and 3,12,000 tons of poor quality buoy metal is assessed. Detrital press metal happens close Ramagundal, Hematite-quartzite appropriate as ironore is available in the Motala-Timmapur zone.

**Manganese:** In the Adilabadregion manganese metal with low phosphorous substance happens as thin focal points admixed with chert and jasper inside Penganga limestones at Gowlightat, Goatkur, Jamdapur and Chanda for a strike length of 7.8 km. A save of 1,17000 tons with normal review of 39.6% of Mn. Poor quality manganese-metal happens as encrustations close Ratampet and Kandali in the Nizamabad locale.

**Molybdenite:** Molybdenite happens at 0.6 km. N.150 W. of Maisamoalle, at 0.6 km. S750 W of Kochamapalle at 1.6 km East of Kundannapalle and in the south of Chegurumandi in the Karimnagar area, as bits, dispersals and stringers facilitated in limit pegmatites, in blue shaded quartz veins navigating porphyrite stone and at places in rock itself. The width of the veins shifts from 15cm. to 40 cm. what's more, the length from 5 m. to 20 m with grade going from 0.01% to 0.2%. Minor events of molybdenum as dispersals in pegmatites or stones are likewise found in these locale.

## Non-metallic minerals

**Asbestos:** Cross-fiber chrysotile asbestos changing long from a couple of mm. to 40 mm. happens in the serpentinised Vempalle dolomites at Somsil. The total fiber length surpasses 50 mm. A zone of serpentinization with irregularly created asbestos strands has been distinguished for a length of 800 meters.

**Amethyst:** To the south of Karimnagar, at Sandral, crystalline amethyst structures a few layers exchanging with white quartz in drusy pits of crevice veins which drift between WNW-ESE and NW-SE. Amethyst and amethystine quartz veins happen likewise at Ramanapalli close Siddipet, Medak region, and at Abdul Nagaram, Mekalgattu and Peddapadu in Warangal area.

**Barytes:** In the Khammam region events of barytes are restricted to a thin belt of the Pakhals around 6.5 km east of Khammam town. The critical events are at Rudramkota, Venkatayapalem, Gopalpur, Ballapet, Kodamur and Cheruvupuram, Barytes happens as focal points, stringers and veins changing in width from a couple of centimeters to six meters. Barytes is accounted for from close Bollaram, and 1.6 km. NE of Virabhadradurgam in the Mahbubnagar region.

Veins extending in thickness from 1 m. to 3.2 meters are seen in sheared zones in the Vempalle dolomite and quartzites.

**Building stones:** An assortment of rocks like rock, dolerite, amphibolite, sandstone, marble which can be utilized as fancy building stones are accessible in Warangal, Khammam, Karimnagar, Rangareddy areas. There are various cleaning units are in operation particularly in Khammam, Rangareddy and Waranagal regions. Groups of white marble are found close Jestalpane, Bethumpudi ,Chimalpahad,

**Coal:** The Pranhita-Godavari valley is known for its coal saves for over a century. Coal bearing Gondwana rocks involve parts of the Adilabad, Karimnagar, Khammam, Nizambad and Warangal areas. The coal bearing Barakar happens at various regions, however is dependably overlain by the more youthful Kamthi sandstones and shales. The Gondwanas, fundamentally the more youthful Kamthis possess a zone surpassing 11,000 Sq.Km. in the state, yet the exposures of the Barakar are few and far between. The coalfields of the State have been isolated into partitioned units and they are North Wardha, Asifabad, Tandur, Kanala, North Godavari and Sarangapalli, Chinnur, South Godavari, Kamawaram, Allapalli, Singareni, Kothagudem, Polancha and Sivapuram and being mined by SingareniColleries Company Ltd., (SCCL).



**JOIN CHANNEL**