

# India: The Land of Diversities SS2-7

## Location of India

- Latitude : 8°4' to 37°6' North
- Longitude : 68°7' to 97°25' East

## India Physiographic divisions

- Northern Mountain Ranges
- Northern Great Plains
- Peninsular plateau
- Coastal plain
- Islands

## Northern Mountain Ranges

- In Northern mountain region there are three mountain ranges
- They are:-
- Trans Himalayas
  - Himalayas
  - Eastern Highlands

## Trans Himalayas

- Trans Himalayas include Karakoram, Ladakh, and Zaskar mountain ranges.
- Mount K2 (8661m) also known as Godwin Austin, the highest peak in India, is in the Karakoram range.
- The average height of the Trans Himalayas is 6000 meters.

## Himalayas

- The Himalayan mountain range forms an arc shaped physical division extending between the north - west trans himalayas and the south-east eastern highlands.
- These mountain ranges have a length of about 2400 kilometers.
- Many of the world's highest peaks are situated here.
- The height of these mountains tend to decrease towards the east.
- The width of these mountain ranges is just about 150 kilometers in Arunachal Pradesh, whereas it is around 400 kilometers in the Kashmir region.
- This physical division extending over 5 lakh square kilometers comprises of three parallel mountain ranges.

## Characteristic features of Himalayan ranges

- Himalayan ranges are divided in to three. They are :-
- Himadri,
- Himachal,
- Siwaliks.

## Himadri

- The highest mountain range.
- Average altitude is 6000 meters.
- Origin of the rivers Ganga and Brahmaputra.
- Has a number of peaks above 8000 meters (Eg: Kanchenjunga, Nandadevi)

## **Himachal**

- Situated to the south of the Himadri.
- Average altitude is 3000 meters.
- The hill stations like Shimla, Darjeeling, etc. are situated in the southern slopes of this range.

## **Siwaliks**

- Situated to the south of the Himachal.
- Average altitude is 1220 meters.
- As the Himalayan rivers cut across this range, its continuity breaks at many places.
- Broad flat valleys seen along these ranges are called Duns. (Eg: Dehradun)

## **Natural vegetation of Himalaya**

- Oak, chestnut, maple etc. are seen at an altitude of 1000 to 2000 metres
- Above 2000 meters are the coniferous trees such Deodar, Spruce, etc.

## **Human life in the lap of the Himalayas**

- The major means of livelihood is animal rearing that depends purely on the grasslands here.
- Sheep are commercially reared in Kashmir and Himachal.
- Potato, barley, and saffron, fruits like apple and orange are cultivated in Siwalik valleys.
- The largest production of tea in India comes from Assam mountain ranges.
- The northern mountains are described as the paradise of tourists due to its natural beauty.(Tourism)
- Hill stations like Shimla, Darjeeling, Kulu, Manali, etc. are situated here.

## **Eastern Highlands**

- This region which is at an altitude of 500 to 3000 meters is also known as Purvachal.
- Cherrapunji, the place receiving the highest rainfall in the world is situated here.
- This region is covered by dense tropical rain forests.

## **Major mountains in Eastern Highlands**

- (1) Patkai Bum-Nagaland
- (2) Naga hills-Nagaland
- (3) Garo, Khasi, and Jaintia hills-Meghalaya
- (4) Mizo hills-Mizoram

## **Significance of the Northern Mountains**

- Have been protecting us from foreign invasions from the north since ancient times.
- Block the monsoon winds and cause rainfall throughout North India.
- Prevent the dry cold winds blowing from the north from entering India during winter.
- Caused the emergence of diverse flora and fauna.
- Source region of rivers.

## **Indian rivers**

Indian rivers are classified in to two. They are:-

1. Himalayan rivers
2. Peninsular rivers

## Himalayan rivers

Rivers	Origin	Length	Tributaries	Sea which it joins
Indus	Manasarovar lake in Tibet	About 2880 Km, in India 709 Km	Jhelum, Chenab, Ravi, Beas, Satlaj	Arabian Sea
Ganga	Gaumugh caves in the Gangothri glacie	About 2500 Km	Yamuna, Gomathi. Ghaghara, Kosi	Bay of Bengal
Brahmaputra	Chema-yung- dung glacier in Tibet	About 2900 Km, in India 725 Km	Tista, Manas, Luhid, Subensary	Bay of Bengal

### Northern Great Plains.

- During the formation of the Himalayas, a huge depression of more than 2000 metre depth took shape along the south parallel to the Himalayas.
- This extensive plain took shape as a result of the continuous deposition by the rivers flowing down from the Himalayas for thousands of years.
- This plain, extending over seven lakh square kilometres and with kilometres of thick sediments, is one among the few extensive alluvial plains of the world.
- This plain is generally known as the Indus-Ganga-Brahmaputra plain.
- The highly fertile alluvial soil is a characteristic feature of this plain.

### The granary of India

- A variety of crops such as wheat, maize, rice, sugar cane, cotton, pulses, etc. Cultivated in Northern Great Plains
- This region is known as the granary of India.
- The Northern Great Plain is one of the most densely populated regions in the world.

### Thar Desert.

- Rainfall is scarce along the western parts of the northern plains.
- That is why most regions in Rajasthan are deserts.
- This desert is known as Thar Desert.
- River Luni and the long vanished river Saraswathy have had significant role in the formation this portion of the plain.
- Dry and salty desert soil is found in this Region.
- Thorns and bushes form the natural vegetation here.

### What are the main crops cultivated in Rajasthan.

- Bajra,
- Jowar,
- These crops require very little amount of water to grow.
- Here cultivation is done mainly with the help of irrigation.

### The Punjab plain

- The Punjab plain is an extensive plain formed by the deposition of the Indus and its tributaries.
- Major crops here are wheat, maize, and sugarcane.

### The Peninsular Plateau

- Entire portions of Madhya Pradesh, Jharkhand and Chhattisgarh as well as parts of Maharashtra, Karnataka, Tamil Nadu, Telengana, Odisha and West Bengal together form a plateau known as the peninsular plateau.

- The peninsular plateau made of hard crystalline rocks forms the oldest and the most extensive physical division of India.
- It extends about 15 lakh square kilometres.
- It includes varied topography such as mountains, plateaus, and valleys.
- The highest peak in this region is the Anamudi (2695 m) situated in the Idukki district of Kerala.
- As the peninsular plateau holds numerous deposits of diverse minerals, this region can be termed as the store house of minerals.
- The major vegetation of this region receiving seasonal rain is tropical deciduous.
- The trees found in this region are teak, sal, sandalwood, bamboo, etc.
- The rainy western slopes of the Western Ghats have tropical rain forests.
- A major portion of the deccan plateau, which is the southern part of the peninsular plateau, has been formed by the cooling of lava that spread over the region millions of years ago.
- Black soil is extensively found in this region made of igneous rocks, named basalt.
- As this soil is best suited for cotton cultivation, it is also called black cotton soil.
- Red soil also formed by the weathering of igneous and metamorphic rocks is comparatively less fertile.
- The presence of iron gives red colour to this soil.
- Laterite soil is formed in the regions with monsoon rains and intermittent hot seasons.

### Peninsular Rivers

- The rivers originating from the elevated regions of the peninsular plateau are known as peninsular rivers.
- As these are rain fed rivers, the water flow in these rivers decreases in summer.
- Peninsular Rivers are divided in to two:-
  - .West flowing rivers- Narmada & Tapi
  - .East flowing rivers-Mahanadi, Godavari, Krishna & Cauvery
- Godavari is the longest among the peninsular rivers.
- Waterfalls are common in most of the peninsular rivers.
- The highest among these is the Jog Falls (225 metres) in the Sharavathi River in Karnataka.

### Human life in the peninsular plateau

- Cotton, pulses, groundnut, sugarcane, maize, ragi, chilli, etc., are the major agricultural crops of this region.
- Iron ore, coal, manganese, bauxite, limestone, etc. are the major minerals found here.
- Hence agriculture, mining, and mineral based industries are the major economic activities.

### Peninsular Rivers

River	Origin	Major tributaries	Sea which it joins
<b>Mahanadi</b>	Maikala Ranges(Madhya Pradesh)	Ib, Tel	Bay of Bengal
<b>Godavari</b>	Western Ghats (Nasik district of Maharashtra)	Indravathi,Sabari	Bay of Bengal
<b>Krishna</b>	Western Ghats(Mahabaleswar in Maharashtra)	Bhima,Thungabhadra	Bay of Bengal
<b>Kaveri</b>	Brahmagiri Ranges in Western Ghats (Karnataka)	Kabani, Amaravathi	Bay of Bengal
<b>Narmada</b>	Maikala Ranges (Chhattisgarh)	Hiran, Banjar	Arabian sea
<b>Tapti</b>	Muntai Plateau (Baitul distruct in Maharashtra)	Anar, Girna	Arabian sea

### **Coastal plain of India**

- The approximate length of this coast line is 6100 kilometres extending from the Rann of Kutchh in Gujarat to the Ganga-Brahmaputra delta.
- The coastal plain of India can be divided into two. They are:-
- Western coastal plain,
- Eastern coastal plain.

### **Comparison between Western coastal plain and Eastern coastal plain**

<b>Western coastal plain</b>	<b>Eastern coastal plain</b>
Between the Arabian Sea and the Western Ghats	Between the Bay of Bengal and the Eastern Ghats
From the Rann of Kutchh to Kanyakumari	From the Sundarban delta region to Kanyakumari
Comparatively narrow	Comparatively wide
Can be divided into Gujarat coast, Konkan coast, and Malabar coast	Can be divided into north Zircar plain and Coromandal coast
Backwaters and estuaries are seen	Delta formation takes place

### **Main occupation of the people in the coastal plains.**

- Fishing
- Tourism
- Rice and coconut are the major agricultural crops along the west coast.
- Rice is extensively cultivated in the basins of the Mahanadi, Godavari, Krishna, and Kaveri along the east coast.

### **Major islands in India**

- The Lakshadweep islands
- The Andaman and Nicobar islands

#### **The Lakshadweep islands**

- The Lakshadweep islands are situated in the Arabian Sea at a distance of about 300 kilometers off shore from Kochi.
- There are 36 islands in this island group, of which only 11 are inhabited.
- Kavarathi is the capital of Lakshadweep.
- Lagoons, sandy beaches and coral reefs are the specialities of the Lakshadweep island group.
- People depend largely on sea for their sustenance as agriculture is sparse here.
- Fishing and tourism are the major sources of income.

#### **The Andaman and Nicobar islands**

- The Andaman and Nicobar islands include about 200 islands of Andaman group and 19 islands of Nicobar group.
- Most of these islands are not inhabited.
- Many of them have dense forests.
- The only volcano in India is situated in the Barren Island here.
- Port Blair is the capital of Andaman and Nicobar islands.
- The Indira Point at the southern most tip of the Nicobar islands is considered as the southern end of India.



### **Himalayan rivers and Peninsular rivers comparison**

Himalayan rivers	Peninsular rivers
• Originate from the Himalayan mountain ranges	• Originate from the mountain ranges in the peninsular plateau.
• Extensive catchment area	• Comparatively smaller catchment area
• Intensive erosion	• Intensity of erosion is less
• Create gorges in the mountain region and meander in plains	• Do not create deep valleys as they flow through hard and resistant rocks
• High irrigation potential	• Less irrigation potential
• Navigable along the plains	• Potential for inland navigation is low

### **The factors influencing the climate of India**

- Latitude
- Physiography
- Nearness to sea
- Altitude
- Mountains
- Winds

### **The seasons in India**

- The seasons in India can be generally classified into four.
- Cold weather season (Winter)
- Hot weather season (Summer)
- South west monsoon season
- Retreating monsoon season.

### **Cold weather season In India (Winter)**

- India experiences winter when the position of the sun is over the southern hemisphere.
- Most places in India experience intense fog and snowfall occurs in the valleys of the Himalayas during this season.
- The months of December, January, and February experienced cold weather in India.
- During the cold weather season days are generally warm and nights are severely cold in North India.
- Snowfall is a common phenomenon in the hill stations like Manali and Shimla.

### **What is Western Disturbance**

- The cyclones originating in the Mediterranean Sea during winter, gradually shifts towards the east and reaches India.
- This causes winter rainfall in the northern plains, especially in the Punjab region.
- The phenomenon is called western disturbance.
- This rain is much beneficial for the winter crops.
- Jet streams, the strong upper air currents in the troposphere have a significant role in bringing the western disturbance to India.

### **Why does the temperature decrease from south to north in India During winter?**

- Because of the position of Sun is in the Southern Hemisphere.

**The coastal regions experience comparatively high temperature. Why?**

- Because of the position of Sun is in the Southern Hemisphere.
- The warm breeze blows into the coastline because it is hotter than the sea shore.

**Hot weather season (Summer)**

- India experiences hot weather when the sun is over the northern hemisphere.
- In the months of March, April and May experienced Summer season in India
- It is in Barmer in western Rajasthan that the highest temperature of summer is felt.
- Loo, mango showers, etc. are some local winds experienced in India during this season.

**South west monsoon season**

- When the sun is over the northern hemisphere, North Indian regions experience intense low pressure.
- In the months of June, July, August and September India experience south west monsoon season.
- Owing to the high pressure over the oceans, wind blows from high pressure to low pressure regions, that is, from the Indian Ocean to the Indian sub- continent.
- As the winds deflect towards right due to coriolis effect, they reach India as southwest monsoon winds.
- Because of the peculiar shape of the Indian peninsula, the southwest monsoon winds bifurcate into two branches on entering the land.
  - Arabian Sea branch
  - Bay of Bengal branch
- The Arabian Sea branch that reaches the coast of Kerala by early June causes heavy rainfall here.

**Arabian Sea branch of South west monsoon season**

- The Arabian Sea branch of south west monsoon that reaches the coast of Kerala by early June causes heavy rainfall here.
- Then it advances to the states of Karnataka, Goa, Maharashtra, and Gujarat and causes rainfall in the western parts.
- Rainfall is scarce in the Rajasthan region because the monsoon branch entering through Gujarat blows parallel to the Aravalli mountain ranges.

**Rainfall is comparatively less along the eastern slopes of the Western Ghats. Why?**

- The western part of the Western Ghats receives a good amount of rain.
- As a result of Western Ghats blocking the Arabian Sea branch of the south-west monsoon wind.
- The south west monsoon winds will not be blowing to the east side of the Western Ghats.
- So the rainfall is comparatively less along the eastern slopes of the Western Ghats.

**By what name is the southwest monsoon rain known in Kerala?**

- Edavappaathi

**The Bay of Bengal branch of South west monsoon season**

- The Bay of Bengal branch of the monsoon advances northward by absorbing more moisture from the Bay of Bengal.
- On reaching West Bengal, crossing the Sundarban delta, it bifurcates into two branches.
- One branch reaches the northeastern states through the Brahmaputra plains and causes heavy rainfall there.
- The other branch enters the Ganga plains and causes rainfall in West Bengal, Bihar, Uttar Pradesh, etc.
- This branch merging with the Arabian Sea branch in the Punjab plains advances north further and causes heavy rainfall along the foothills of the Himalayas.

### **Retreating monsoon season(North East Monsoon)**

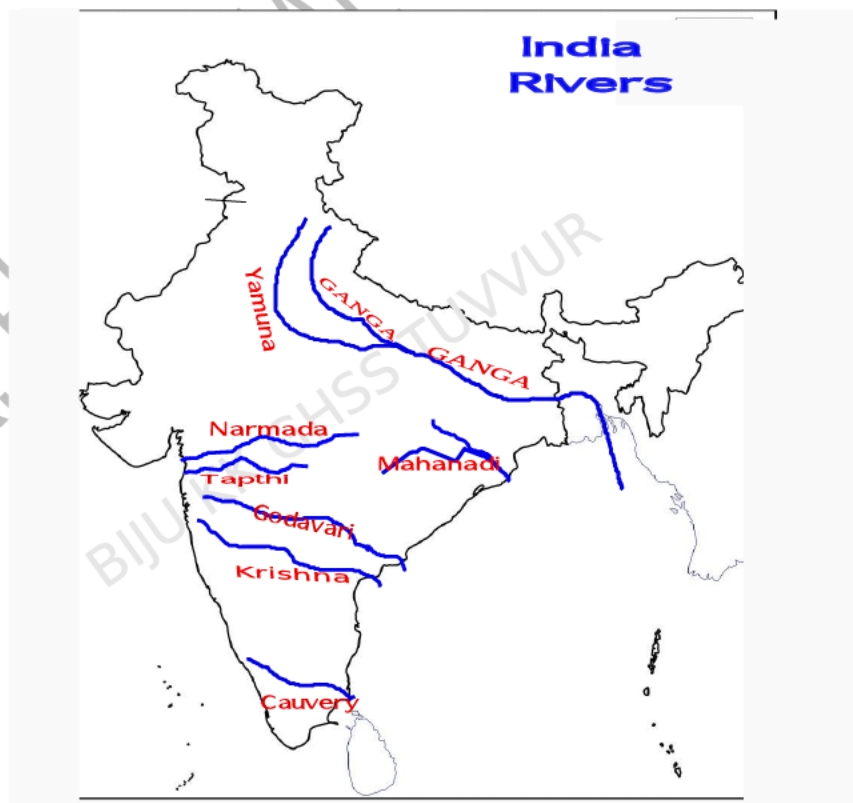
- By the end of September, as the sun apparently shifts towards the southern hemisphere, intense high pressure develops over the northern plains.
- Comparatively low pressure over the Indian Ocean causes wind to blow from the northern part of India towards the Indian Ocean.
- These winds known as north-east monsoon winds are dry winds that do not generally cause any rain in India.
- This season termed as north east monsoon
- This season is actually a transition period between the rainy season and the forth coming winter.
- This season experienced during the months of October and November.
- This season termed as north east monsoon
- This season is actually a transition period between the rainy season and the forth coming winter.
- This season experienced during the months of October and November.
- The winds blowing from land to sea due to the attraction of low pressure over the Bay of Bengal takes from northeast to southwest direction.
- It absorbs moisture from the Bay of Bengal and causes rainfall along the coromandal coast, especially the Tamil Nadu coast.
- This is the main rainy season of Tamil Nadu.
- Kerala and some parts of Karnataka also receive northeast monsoon rains.

### **October heat**

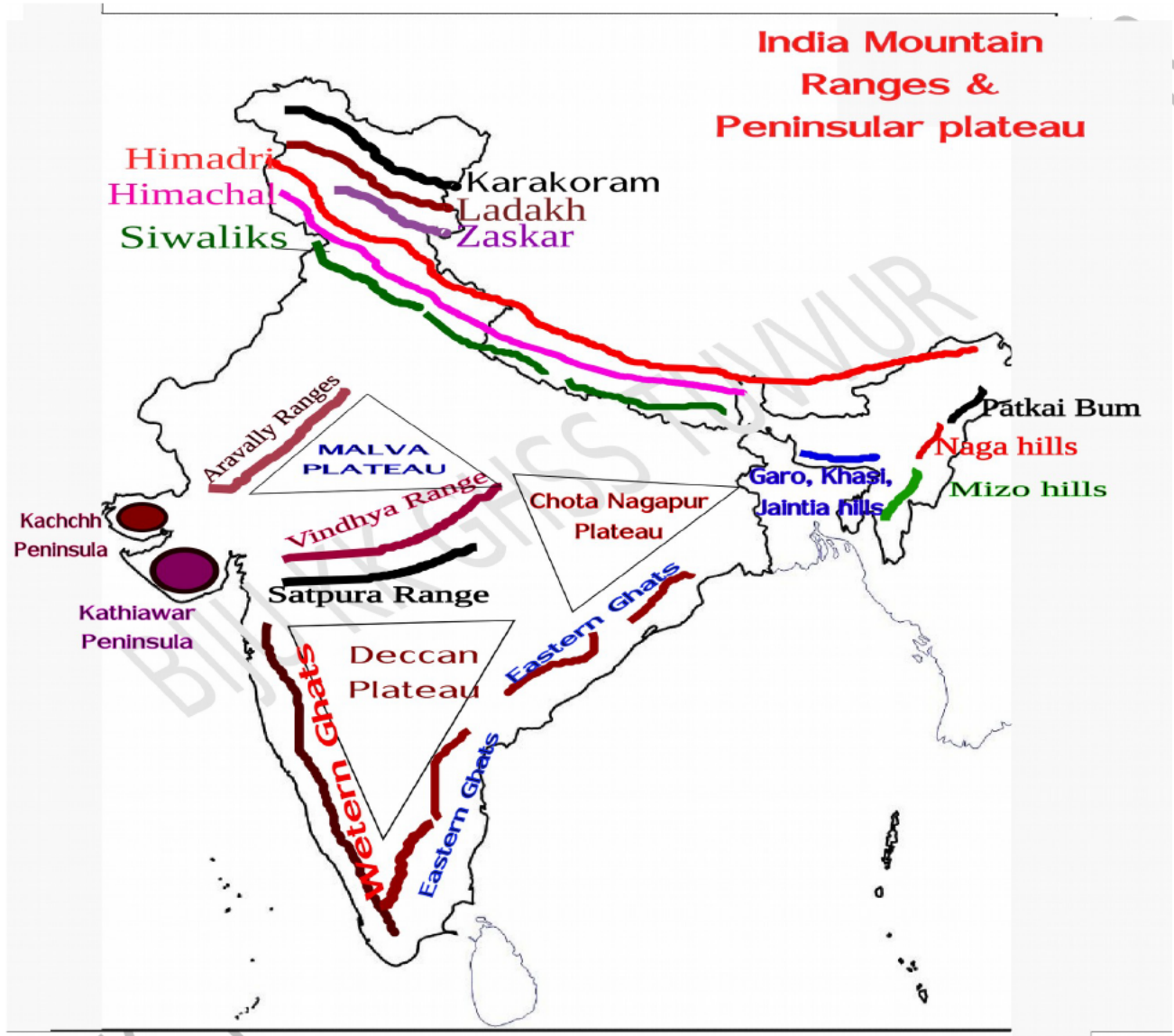
- The days in October and November unbearable due to high temperature and humidity.
- This phenomenon is known as October heat.

### **By what name is the northeast monsoon rain known in Kerala?**

- Thulaavarsham.







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