

India: The Land of Diversities

Physiography

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The Northern Mountain Ranges	The Northern great plain	The Peninsular Plateau	The Coastal plain	The Islands
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The Northern Mountain Ranges

Trans Himalayas	Himalayas	Eastern Highlands (Purvachal)
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Trans Himalayas

Karakoram The highest peak in India - Mount K2 (8661m) / Godwin Austin -	Ladakh	Zaskar
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Himalayas 5 lakh square kilometres Three parallel mountain ranges

Himadri	Himachal	Siwaliks
<ul style="list-style-type: none"> • The highest mountain range. • Average altitude is 6000 metres. • Origin of the rivers Ganga and Brahmaputra • Has a number of peaks above 8000 metres Kanchenjunga (Sikkim) UC Vahid 	<p>Situated to the south of the Himadri. Average altitude is 3000 metres. The hill stations like Shimla, Darjeeling, etc. are situated in the southern slopes of this range.</p>	<ul style="list-style-type: none"> • Situated to the south of the Himachal. • Average altitude is 1220 metres. • 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)

Eastern Highlands Altitude of 500 to 3000 metres

Patkai Bum Boundary between Arunachal and Myanmar	Naga hills	Garo, Khasi , and Jaintia hills Cherrapunji in Khasi (Meghalaya)	Mizo hills
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Human life in the lap of the Himalayas

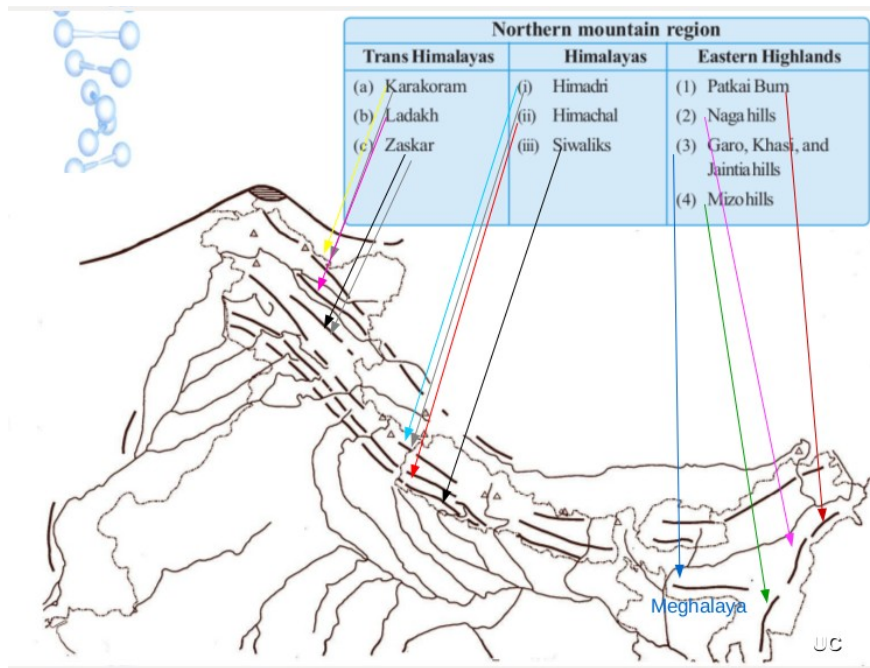
Sheep are commercially reared in Kashmir and Himachal. The valleys of Siwaliks have been formed by the deposition of alluvium brought down by the Himalayan rivers. Apart from potato, barley, and saffron, fruits like apple and orange are cultivated here. The largest production of tea in India comes from Assam mountain ranges. Hill stations like **Shimla, Darjeeling, Kulu, Manali**, etc. are situated here.

Significance of the Northern Mountains

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

Northern Great Plains

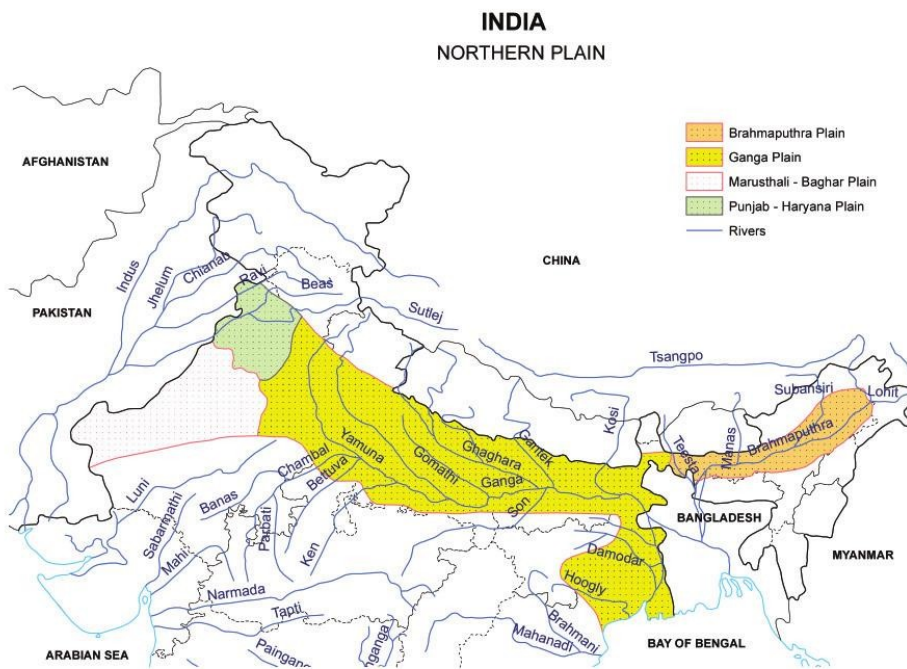
During the formation of the Himalayas, a huge depression of more than 2000 metre depth took shape along the south parallel to the Himalayas.
This extensive plain took shape as a result of the continuous deposition by the rivers flowing down from the Himalayas for thousands of years.
This plain, extending 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. This region is known as the **granary of India**.



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Name of the plain

Marusthali -Baagar plain of Rajasthan	Punjab-Haryana plain	Ganga plain	Brahmaputra plain of Assam
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Thar Desert.

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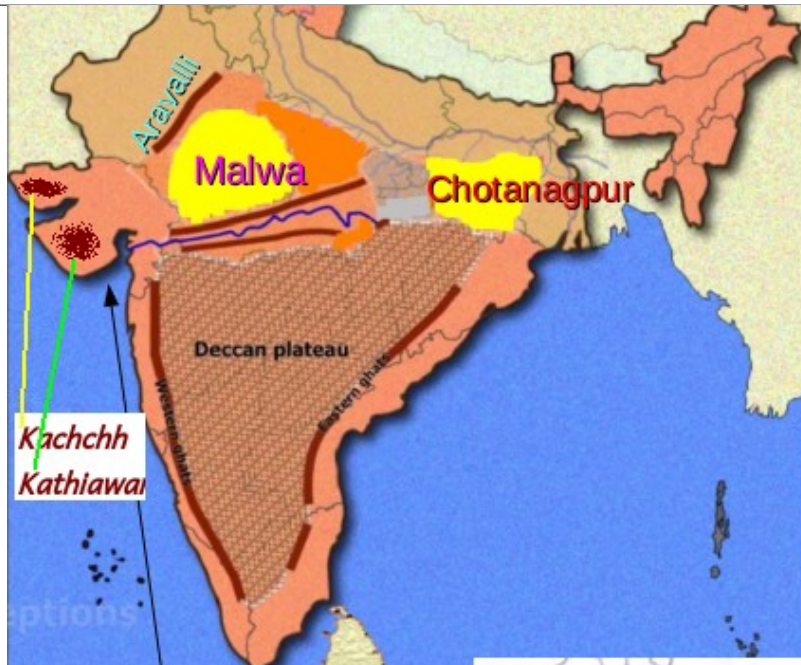
The Great Indian desert lies in Rajasthan west of Aravalli range. Rainfall is scarce. River Luni and the long vanished river **Saraswathy** have had significant role in the formation this portion of the plain. Dry and salty desert soil is found in this region. Thorns and bushes form the natural vegetation here. Bajra, jowar, etc. are the main crops cultivated in Rajasthan.

Rainfall is scarce in the Rajasthan region because the monsoon branch entering through Gujarat blows parallel to the Aravalli mountain ranges.

The Peninsular Plateau

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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. The highest peak in this region is the **Anamudi** (2695 m) (Idukki). Known as as the **store house of minerals**.



The Peninsular Plateau – vegetation

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The major vegetation of this region receiving seasonal rain is tropical deciduous. The trees found in this region are teak, sal, sandalwood, bamboo, etc. But the rainy western slopes of the Western Ghats have tropical rain forests.

The Deccan Plateau

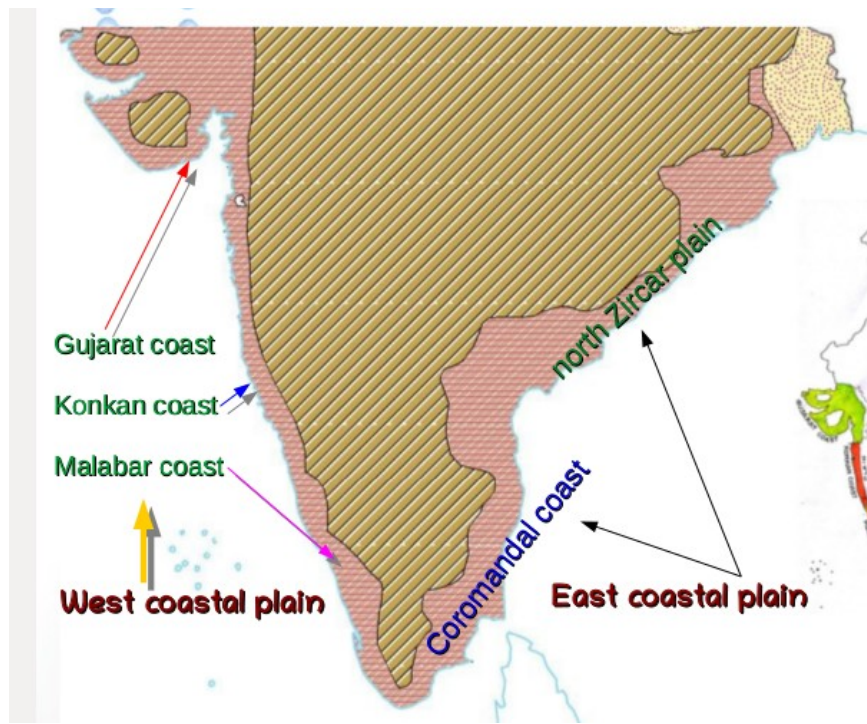
The southern part of the peninsular plateau, has been formed by the cooling of lava that spread over the region millions of years ago. **Black soil** is extensively found in this region made of igneous rocks, named basalt. As this soil is best suited for cotton cultivation, it is also called black cotton soil. **Red soil** also occurs in large quantities. This soil 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**.

coast line

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.

Western coastal plain	Eastern coastal plain
<ul style="list-style-type: none"> • Between the Arabian Sea and the Western Ghats • From the Rann of Kutchh to Kanyakumari • Comparatively narrow • Can be divided into Gujarat coast, Konkan coast, and Malabar coast • Backwaters and estuaries are seen • Influence of south-west monsoon is more 	<ul style="list-style-type: none"> • Between the Bay of Bengal and the Eastern Ghats • From the Sundarban delta region to Kanyakumari • Comparatively wide • Can be divided into north Zircar plain and Coromandal coast • Delta formation takes place • Influence of north-east monsoon is more

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Islands

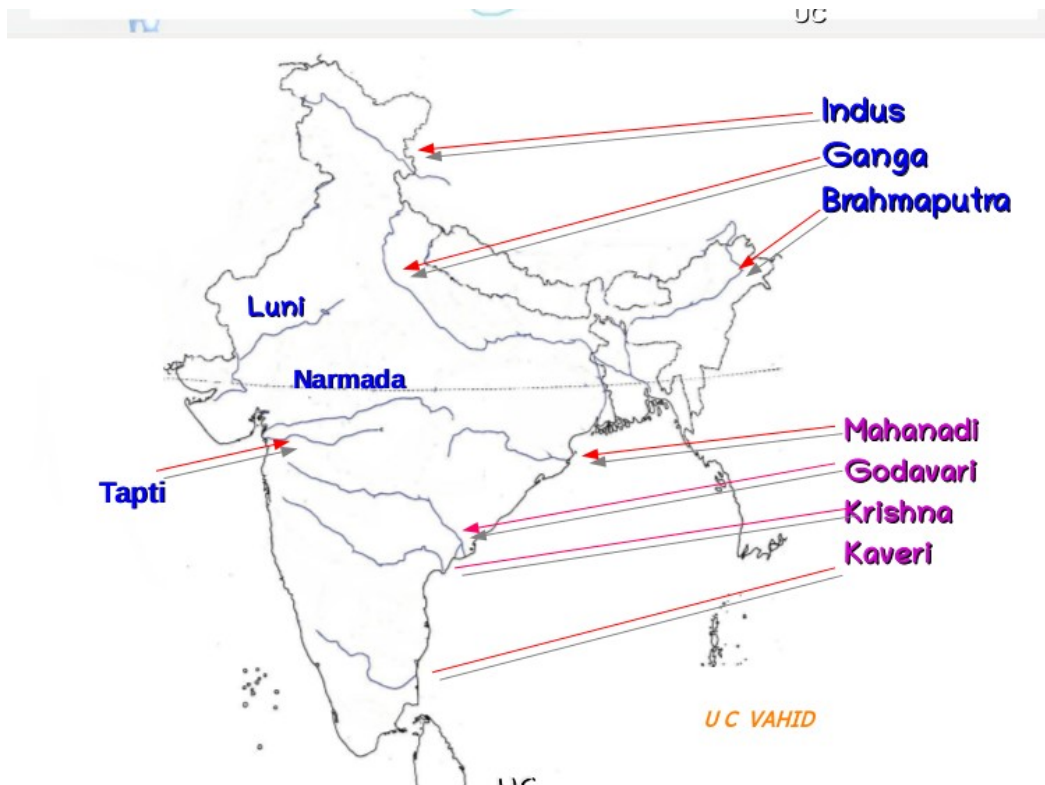
<p>Lakshadweep islands</p> <p>Situated in the Arabian Sea There are 36 islands in this island group, of which only 11 are inhabited. Bangaram, Kadamath, Minicoy, Kavarathi, Agathi, Androth, Kalpeni, Aminidivi, Chethlath, Bithra and Kilthan are the major islands. Kavarathi is the capital of Lakshadweep. Fishing and tourism are the major sources of income.</p>	<p>The Andaman and Nicobar islands</p> <p>Situated in the Bay of Bengal. 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.</p>
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The rivers

<p>Himalayan rivers</p> <ul style="list-style-type: none"> • Originate from the Himalayan mountain ranges • Intensive erosion • Create gorges in the mountain region and meander in plains • High irrigation potential • Navigable along the plains • These rivers receive water both from the monsoon and snow melt 	<p>The Peninsular rivers</p> <ul style="list-style-type: none"> • Originate from the mountain ranges in the peninsular plateau. • Comparatively smaller catchment area • Intensity of erosion is less • Do not create deep valleys as they flow through hard and resistant rocks • Less irrigation potential • Potential for inland navigation is low • These rivers receive water only from the monsoon
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The Peninsular rivers

<p>West flowing rivers</p>	<p>East flowing rivers</p>
<p>Narmada, Tapti</p>	<p>Mahanadi, Godavari, Krishna, Kaveri</p>



Himalayan rivers	Origin	Length	Tributaries	States through which it flows	Sea which it joins
Indus	Manasarovar lake in Tibet	About 2280 Km (Only 709 Km of this river flows through India)	• Jhelum •	• Jammu and Kashmir • Punjab	Arabian Sea
Ganga	Gaumugh caves in the Gangothri glacier	About 2500 Km	• Yamuna •	• Uttarakhand • UP • Bihar • Jharkhand • West Bengal	Bay of Bengal
Brahmaputra	Chema-yungdung glacier in Tibet	About 2900 Km (Only 725 Km in India)	• Tista •	• Arunachal • Assam	Bay of Bengal

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River	Origin	Approximate length	Major tributaries	States through which it flows	Sea which it joins
Mahanadi	Maikala Ranges (Chhattisgarh (Madhya Pradesh))	857 Km	Ib, Tel	• Chhattisgarh • Odisha	• Bay of Bengal
Godavari	Western Ghats (Nasik district of Maharashtra)	1465 Km	Indravathi, Sabari	• Maharashtra • Karnataka • Chhattisgarh • Telangana • Andhra Pradesh	• “
Krishna	Western Ghats (Mahabaleswar in Maharashtra)	1400 Km	Bhima, Thungabhadra	• Maharashtra • Karnataka • Telangana • Andhra Pradesh	• “
Kaveri	Brahmagiri Ranges in Western Ghats (Karnataka)	800 Km	Kabani, Amaravathi	• Karnataka • Tamil Nadu	• “
Narmada	Maikala Ranges (Chhattisgarh) MP	1312 Km	Hiran, Banjar	• Madhya Pradesh • Maharashtra • Gujarat	• Arabian Sea
Tapti	Muntai Plateau (Baitul district in Maharashtra) MP	724 Km	Anar, Gima	• Madhya Pradesh • Maharashtra • Gujarat	• “

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The factors influencing the Climate of India

Latitude	Physiography	Nearness to sea	Altitude	Tropical cyclone and western disturbance
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The seasons in India

Cold weather season	Hot weather season	Southwest monsoon season	Retreating monsoon season
December to February	March to May	June to September	October and November

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. 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.

Hot weather season – local winds -

Loo, mango showers, Kalbaisakhi

Southwest monsoon season

When the sun is over the northern hemisphere, North Indian regions experience intense **low pressure**. 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

<ul style="list-style-type: none"> • Arabian Sea branch 	<ul style="list-style-type: none"> • Bay of Bengal branch
<p>The Arabian Sea branch 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.</p>	<p>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 Brahmaputhra plains and causes heavy rainfall there.</p>
<p>Rainfall is scarce in the Rajasthan region because the monsoon branch entering through Gujarat blows parallel to the Aravalli mountain ranges</p>	<p>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.</p>

Retreating monsoon season

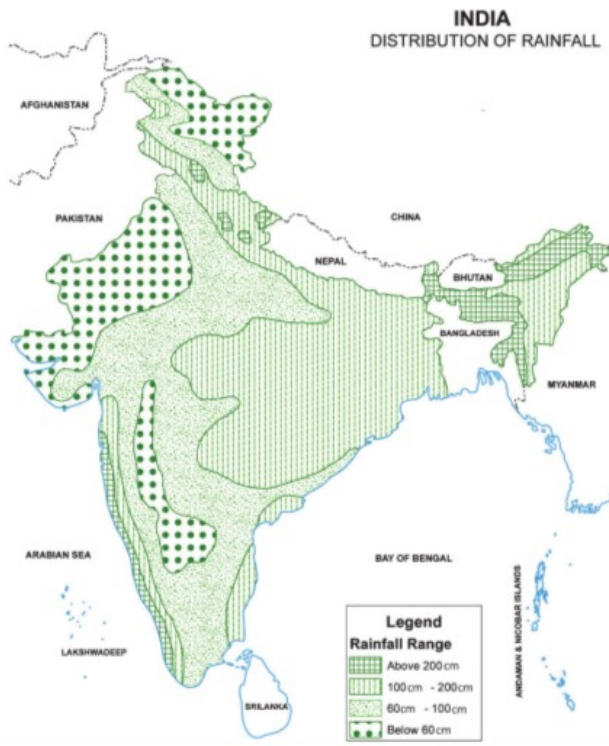
By the end of September, as the sun apparently shifts towards the southern hemisphere, **intense high pressure** develops over the northern plains. Comparatively low pressure over the Indian Ocean causes wind to blow from the northern part of India towards the Indian Ocean.

The winds blowing from land to sea due to the attraction of low pressure over the Bay of Bengal takes a 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

Retreating monsoon season experienced during the months of October and November makes the days unbearable due to **high temperature and humidity**. This phenomenon is known as October

heat.



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