

PHYSICAL FEATURES OF SOUTH ASIA

Formation

India is a land of varied physical features. The physical features of India have evolved over several geological periods. According to the theory of Plate Tectonics the earth's crust is formed from seven major and some minor plates.

When the plates move, they cause disturbances in the continental crust leading to folding, faulting and volcanic activity. These plates are classified into:

- . Convergent boundary,
- . Divergent boundary and
- . Transform boundary

Convergent boundary is formed when two plates converge or move towards each other. Divergent boundary is formed when two plates move away from each other. Transform boundary is formed when two plates move towards each other, but finally end up sliding past each other.

Peninsular India is a part of an ancient super continent:

Gondwanaland.

Gondwanaland originally consisted of a number of landmasses including South America, Africa, Australia, and Antarctica all joined together. Convectional currents split up the crust of Gondwanaland into smaller parts, of which the Indian plate was one.

The Indian plate drifted north till it collided with the Eurasian plate. The collision caused the sedimentary rocks in the Tethys Sea to be lifted upwards. This is how the Himalayas were formed. The oldest physical feature is the Peninsular Plateau. It is composed of igneous and metamorphic rocks, and has hills and wide valleys.

The Himalayas

The Himalayas are geologically young fold mountains covering the northern border of India. The Himalayan range is the highest and the most rugged mountain range in the world.

The Himalayas are formed from three parallel ranges of mountains:

- . The Himadri,

- . The Himachal and
- . The Shiwaliks.

The Himadri also called the Great or Inner Himalayas, is the northern most range of the Himalayas. This range is in a single, unbroken line and has the highest peaks like Mount Everest and Mount Godwin Austin.

Several glaciers, such as the Gangotri and the Siachen, originate from this range. The Zoji La pass is situated in the Great Himalayan range and serves as the only link between Ladakh and Kashmir.

The next range the Himachal, is located south of the Greater Himalayas. The height of mountains in this range is between 3700 and 4500 metres hence is also referred to as the Lesser Himalayas! In other words,

the Himachal is made up of altered rocks. The Pir Panjal is the longest range in the Lesser Himalayas. The Dhauladhar and the Mahabharat are other ranges famous for their beauty. The Himalayas are also divided into regions from east to west.

The area between the Indus and the Sutlej is traditionally known as the Punjab Himalaya. Nanga Parbat is the highest peak in Punjab Himalaya.

The Kumaon Himalayas is the name used regionally for the portion of the Himalayas between the Sutlej and the Kali rivers. Nanda Devi is the highest peak in this region.

The area that lies between the Kali and the Tista rivers is known as the Nepal Himalayas. The Assam Himalayas refer to

the region between the Tista and the Dihang rivers.

The division of the Himalayas on the east is called the Purvanchal or the Eastern Hills and Mountains. The Brahmaputra forms the eastern most boundary of the Purvanchal region. The Purvanchal range is made up of the Patkai hills, the Naga hills, the Manipur hills and the Mizo hills.

The Northern Plain

The Northern Plain is located in the southern part of the Himalayan range. The plain is formed from the flood plains of three big river systems:

- The Indus,
- The Ganga and
- The Brahmaputra

The Northern Plain is also called the Indo-Gangetic plain. The soil cover in this plain is rich and fertile, and water is found in plenty, combined with a favourable climate for growing several major crops, the Northern Plain is one of the world's most intensively farmed areas and hence very densely populated.

The rivers coming from the northern mountain carry a huge load of eroded soil and debris. As a river flows down towards the plains, due to the gentler slopes, its velocity decreases, and the material carried by it gets deposited on the way creating riverine islands.

The Northern Plain can be divided into three main parts:

- . The Indus and its tributaries – the Jhelum, the Chenab, the Ravi, the Beas

and the Sutlej - originate in the Himalaya. This part of the Northern Plain is also called the Punjab Plain.

- . The Ganga Plain lies between the Ghaggar and the Teesta rivers.
- . The Brahmaputra Plain lies in the state of Assam.

The states that fall under the Northern Plain are: Punjab, Haryana, Delhi, Uttar Pradesh, Bihar, parts of Jharkhand and West Bengal, and Assam.

The Northern Plain is divided into four regions:

- . Bhabar,
- . Terai,
- . Bhangar and
- . Khadar

The Bhabar region is a narrow belt of level surface in the Northern Plain, lying parallel to the slope of the Shiwaliks.

All rivers and streams that disappear in the Bhabar belt resurface in the Terai region. The Terai region consists of wet, swampy and marshy land.

Bhangar, is the largest part of the northern plain and is formed of older alluvium. This region lies above the flood plains of the rivers.

The newer, younger deposits of the flood plains form the fourth region of the Northern Plain called Khadar. The land is fertile, and used extensively for agriculture.

The Peninsular Plateau

Plateaus are also called tablelands like the Peninsular Plateau which is a tableland.

This tableland was formed when Gondwanaland broke and the pieces drifted apart. It is composed of old crystalline, igneous and metamorphic rocks. The Peninsular Plateau consists of both broad and shallow valleys, and rounded hills.

The Peninsular Plateau has two broad divisions:

- The Central Highlands and
- The Deccan Plateau

The Central Highlands refer to the portion of the Peninsular Plateau that lies to the north of the Narmada river and covers a majority of the Malwa Plateau.

The Vindhya Range forms the boundary of the Central Highlands on the south while the Aravalis form the north-western boundary of these highlands. The Peninsular Plateau gradually merges into the sandy and rocky desert of Rajasthan and the rivers are the Chambal, the Sind, the Betwa and the Ken.

Bundelkhand is the local name for the eastward extensions of the Peninsular Plateau. The other eastward extension is Baghelkhand. The Chhota Nagpur Plateau is the eastern extension of the Central Highlands. The Damodar is an important river that drains this region.

The Deccan Plateau is a triangular landmass lying to the south of the Narmada. It has the Mahadev hills, the

Kaimur hills and the Maikal range on the eastern side. In the north-east is an extension of the Plateau, called the Meghalaya and Karbi-Anglong Plateau.

A fault demarcates the Meghalaya and Karbi-Anglong Plateau from the Chhota Nagpur Plateau.

There are three prominent hill ranges on the north-eastern side of the plateau i.e. the Garo range, the Khasi ranges, and the Jaintia hills.

The Deccan Plateau in the south is bordered by Western Ghats on the west, and the Eastern Ghats on the east. The Western Ghats are tall, lie parallel to the western coast, are continuous and can be crossed through passes only.

The Eastern Ghats stretch from the Mahanadi Valley to the Nilgiris in the south. The Eastern Ghats are discontinuous and irregular. They are interspersed with several rivers that drain into the Bay of Bengal which are the Godavari, the Mahanadi, the Krishna, and the Kaveri.

Orographic rainfall in the Western Ghats is caused when a range of mountains intercepts rain-bearing monsoon winds. The Western Ghats intercept the westerly monsoon winds, forcing these winds to deposit most of their rain in the windward side, which is the western side. Therefore, the area of the Deccan Plateau to the east of the Ghats receives very little rainfall.

The Western Ghats are known in different regions by different names like the Konkan coast in Maharashtra while as the Malabar

Coast in Kerela. One of the distinct features of the Peninsular Plateau is the black soil area, known as the Deccan Trap. The Deccan Trap is of volcanic origin.

On the western and north-western margins of the plateau are the Aravali hills, one of the oldest ranges in the world. The Aravali hills extend from Gujarat to Delhi in a south-west to north-east direction.

Peninsular Rivers

The Western Ghats make up an important water divide in peninsular India. The major rivers in peninsular India are the Mahanadi, the Godavari, the Krishna and the Kaveri, which flow eastwards and drain into the Bay of Bengal.

The two major rivers that flow westward and drain into the Arabian Sea are the Narmada and the Tapi. The tributaries of Narmada river are the Sher, the Shakkar, the Dudhi and the Tawa. The Godavari is the longest and the largest peninsular river. It starts from Trimbak located in Nashik district of Maharashtra.

The tributaries that strengthen the Godavari are the Purna, the Wardha and the Pranhita. The major tributaries are the Wainganga, the Manjira and the Penganga.

The biggest tributary of the Mahanadi is the Shivrath river. The Krishna river is the second longest peninsular river. The main tributaries of Krishna river are the Tungbhadra, the Koyana, the Ghatprabha, the Musi and the Bhima.

The major tributaries of the Kaveri are the Amravati, the Bhavani, the Hemavati and the Kabini. The Sivanasamudram falls made by the Kaveri are the second highest waterfall in India.

The Indian Desert, the Coastal Plains and the Islands

The Great Indian Desert is a rolling sandy plain covered by sand dunes and most of these are crescent-shaped sand dunes, called Barchans of longitudinal dunes. Seif dunes are thought to develop from barchans if the direction of the wind changes. The rainfall in this region is quite low-below 150 millimetres per year.

During the rainy season, some streams but as these do not have enough water to reach the sea they disappear slowly into the sand

again. The only exception is the river Luni, which is a large river. Beyond the Western Ghats and the Eastern Ghats, the plateau is bordered by narrow coastal strips. The western strip runs along the Arabian Sea, while the eastern strip is along the Bay of Bengal.

The western coastal area is divided into three sections:

- . Konkan
- . The Kannad Plain and
- . The Malabar Coast.

The eastern coast runs along the Bay of Bengal, displays wide and level stretches and has different local names. In the northern parts, people refer to this coastal area as the Northern Circars while people in the south call it the Coromandel Coast.

Large rivers like the Mahanadi, the Godavari, the Krishna and the Kaveri form a wide delta on the eastern coast. The lake Chilika on the eastern coast is said to be the largest salt water lake in India. It is located in Orissa, to the south of the Mahanadi delta.

Off the mainland, the country consists of two groups of islands or archipelagos:

- . The Lakshadweep Islands group, and
- . The Andaman and Nicobar Islands.

The Lakshadweep Islands overall consists of small coral islands. Coral polyps are microscopic marine organisms, which have short life spans. Coral reefs are built of a combination of a hard rock-like secretion from the coral polyps and their skeletons.

There are three main kinds of reefs:

- . Barrier reef,
- . Fringing reef and
- . Atolls.

A barrier reef is one that is separated from a mainland or island shore by a deep lagoon like The Great Barrier Reef of Australia. An atoll is a circular barrier reef. There is no central island, and the reef extends all the way around the lagoon, forming the shape of a horseshoe. A fringe reef is one that is directly attached to a shore.

Before 1973, the Lakshadweep Islands were known as Laccadive, Minicoy and Amindive. The Andaman and Nicobar Islands is a long chain of islands extending from north to south, located in the Bay of Bengal. The entire group of islands is

divided into two broad categories: the northern islands are called the Andaman, and the southern islands constitute the Nicobar. The Andaman and Nicobar Islands house India's only active volcano located on the Barren Island.

Pakistan: Features and Climate

Location

Though Pakistan and India share a some common history their physical features are quiet different from each other. Five of the fourteen highest peaks in the world are located in Pakistan. Pakistan is located on India's north-western boarder, Iran to its west, Afghanistan to its north west and the Arabian sea to its south.

Physical features

Because of its location along the coalition point between Indian and Asian tectonic plates, most of the country has high and rugged mountains. Earth quakes occur when the tech tonic plates move towards each other. Due to this cause nearly 18 earth quakes occurred in Pakistan till now.

Moutains

Sulaiman Range and Kirthr Range are there in the western region of Pakistan. In the north western region the two important mountain passes are Khyber and Bolan. These passes have Historical importance as foreign traders and invaders enter to Indian subcontinent through these passes.

Rivers

Though Pakistan was a mountainous country it was fertile because of Indus river and its tributaries Jhelum, Chenab, Ravi, Sutlej and Beas. Due to these rivers this region is known as Gift of the Indus.

Agriculture

The fertile soil in this region supports agriculture. Agriculture is the chief occupation of this country. Wheat and paddy are the important crops grown in the wet areas and Maize is grown in dry areas. Sugar cane and cotton are important cash crops of Pakistan.

Industries

Most of the industries are based on agriculture as Pakistan was basically an agricultural country. Pakistan has Industries like Cotton textile, sugar, cement, paper and chemical.

Mineral resources

Pakistan also has some minerals like coal and petroleum, which contribute to the development of the country's economy.

Economic Centers

Some of the economic centers of Pakistan are

- Islamabad, the Capital city of Pakistan.
- Karachi, an important port.
- Peshawar, gateway to the Khyber pass.
- Quetta, situated along the Bolan pass.

- . Hyderabad, Lahore and Rawalpindi are other important cities.

Climate

Generally Pakistan experiences hot summers and very cold winters. The country receives abundant rainfall from South west monsoon in summer and from the north west cyclonic winds in the winter.

Bangladesh

Bangladesh is located to the east of India. The Tropic of Cancer divides it into two equal halves. It is bordered by Myanmar in the southeast and Bay of Bengal in the south. It shares its eastern, western and

northern boundaries with India.

Rivers

Bangladesh has many tributaries of the rivers Ganga and Brahmaputra and low-lying wet lands known as marshy areas. Much of Bangladesh is less than ten meters above sea level. Eighty percent of rests on the flooded plains of the River Ganga.

Floods

As the country is located on the Ganga–Brahmaputra delta Bangladesh is troubled by disastrous floods almost every year. each year about 26,000 square kilometres of the country is flooded either from monsoon rain or from snow-fed rivers. These conditions have caused huge

damages in Bangladesh in the past.

Ganga and Brahmaputra delta

Most of the country is composed of fertile alluvium sediments, deposited by the rivers that overflow their banks during the monsoons and cover most of the country. The rivers Ganga and Brahmaputra together form the world's largest delta. This delta region has many tributaries of rivers and also has the low-lying wet lands known as marshy areas.

Rain fall

The marshy lowlands of Bangladesh get flooded during the monsoon months as they receive heavy rains caused by the southwest monsoon winds. When the monsoon retreats, it brings with it periodic

cyclones that cause a lot of destruction.

Climate

The temperatures in Bangladesh are generally very high in the summers and gradually decrease during the winters. The Sylhet and Chittagong hills, which are covered with monsoon forests. Teak is one of the predominant trees grown in this region.

Forests

The Sundarbans forest located to the south of the country. The name Sundarbans have been derived from the Sundari trees that grow abundantly here. The forest is also well known for its tigers. While tigers inhabit the Sundarbans, snakes are common in the marshy

lowlands of Bangladesh.

Agriculture

Agriculture is the major occupation of the people in Bangladesh due to this most of the industries in Bangladesh are agro-based. The other industries that contribute to the economy are paper, sugar, tea, glass and match box industries.

The marshy lowlands support the cultivation of jute. The jute industry here is well known all over the world. Paddy, cotton and tobacco are also grown in Bangladesh. Tea is cultivated on the slopes of the hills.

Mineral Resources

Mineral resources such as limestone, natural gas, salt and petroleum are found here in small quantities. Mineral resources also contribute to the country's economy.

Cities

Bangladesh has some of the fast growing cities in the world. They are Dhaka, the capital city, Chittagong, a major port, and Khulna, another important city. These cities and the other regions of Bangladesh are highly populated.

Population

Bangladesh has made considerable economic progress. Though it is the most densely populated country in the world and troubled by the floods, cyclones, famines and other natural disasters that have struck the country.

Nepal

Nepal, also known as the Himalayan Kingdom due to its dominance in the Himalayas in the world. Nepal is also called as located to the north of India. India on its east, west and south made Nepal a landlocked nation with no coastal line.

Mountains of Nepal

In the northern part of Nepal the great Himalayan range, which is also called the Himadri stretched. Some of the well

known peaks in the world Mt.Makalu, Mt. Kanchenjunga, Mt. Daulagiri and Mt. Annpurna are located here. The Himalayan Kingdom of Nepal is home to the worlds' highest peak, Mt. Everest.

Terai region of Nepal

In the Southern part of Himalyas there is a low lying region , which is known as terai. Most of the rivers of the Nepal flows through this region. The rivers like Karnali, Kali gandaki, Sapta kosi. These rivers are originated from the mountains and fed by the melting glaciers.

Valleys of Nepal

Valleys are located between the steep moutains of Nepal. Kathmandu and Pokhara are the two main valleys of that

kind. Kathmandu is the capital city of Nepal.

Climate of Nepal

In northern parts of Nepal the temperature is extremely low because this region is covered in snow due to its high altitude.

In the terai region of Nepal the temperature is high in summers. The rainfall is heavy in the east and decreases towards the west.

Forests of Nepal

Forest cover of Nepal is different from valleys to mountains. The lower slopes have evergreen forests while the higher slopes have deciduous forests. At the highest areas evergreen, deciduous and coniferous trees are found. At much higher levels only the coniferous forests are

found.

Wildlife of Nepal

Rhinoceros, Tigers, Leopards, Bear and Deer are found in the thick forests of Nepal. At much higher altitude Musk deer, Snow leopard, Yaks and Red pandas are found.

Agriculture

As this country is mountainous only 1/5th of land is used for cultivation. The main occupation of Nepal is agriculture. Paddy, Wheat, Jute, Vegetables and Fruits are grown in the Terai region. Corn, Millets and Pulses are cultivated in the lower slopes of the Himalayas.

Mineral resources

Mica, Copper, Iron ore and Lignite are the minerals found here which also contribute to the Nepals economy. Due to its mountainous terrain much of the country hasn't been utilised for mining.

Industries

The economy of Nepal is also dependent on its small scale industries like cigarette, bricks, textiles, footwear, liquor, cement etc. Along with these marble polishing is also a popular occupation of Nepal.