

GEOGRAPHY

THE COASTAL INDIA

1. Introduction:

Coastal plains of India are the waved platforms and the raised beaches above the water mark. These are mainly the emerged floors from the seas that are adjacent to the land. The Peninsular India plateau is bordered by the narrow Coastal Plains. Following the surfacing of these lowlands, the sea level fluctuations have brought some important changes in the surface features of the sea shores. The Deccan plateau in India is also surrounded by the coastal plains in the west and the east.

The Coastal plains that surround the Palghat town in the southern region of Kerala are comparatively broad. In some places the width of the plains gets extended to about 96km. The off-shore bars are enclosed with lagoons running parallel to the coastal plains in the south of Kerala. Also referred as Kayals, the lagoons receive water from numerous rivers, to which these are linked through narrow openings. The coastal zone located in the western part alongside the Arabian Sea is known in the south of Goa, as Malabar, while in the north of Goa, it is called Konkan.

Further, there are numerous estuaries in the Indian Coastal Plains. Among these, the major ones are Narmada River and Tapi River in the state of Gujarat. The plain is also blessed with natural harbors such as Marmagao and Mumbai. In the south, the coastal plains get combined with the salt water lakes also known as lagoons. Spits and sand bars can be found at their mouths. The coast is popular for the serene backwaters. The coastal plains alongside the Bay of Bengal are very extensive and also differ from the plains in the western strip. Fast flowing, small rivers cut part the rocky coastal strip.

That what separates the coastal plains in India from the interior is a large land of mass characterized by unique features. Though having limited vegetation, yet the coastal plains in India significantly contributes to the geography of the country.

2. Coastal plains of India:

An Amazing Geologic Feature can be found both on the eastern as well the western coasts of the country. Between the Eastern Ghats and the east coast of India are located the East Coastal Plains extending from the Subamarekha river along the West Bengal-Orissa border to Kanniyakumari. A major part of the plains is formed as a

result of the alluvial fillings of the littoral zone by the rivers Mahanadi, Godavari, Krishna and Cauvery comprising some of the largest deltas.

Its western boundary is a discontinuous line of the Eastern Ghats, more precisely by the contours of 75 m in Orissa, 100 m in Andhra Pradesh and 150 m in Tamil Nadu. In contrast to the West Coastal Plains, these are extensive plains with an average width of 120 km although it may be as wide as 200 km in the deltaic regions and as narrow as 35 km in-between the deltas.

This plain is known as the Northern Circars between the Mahanadi and the Krishna rivers and Carnatic between the Krishna and the Cauvery rivers.

Division of Eastern Coastal Plain: Depending upon physiographic variations, the entire plain is divided into three regions.

- The Utkal plain
- The Andhra plain
- The Tamil Nadu Plain

The Utkal Plains:

It is a coastal plains in eastern Orissa state, eastern India. Extending over about 16,000 square miles, the plains are bounded by the Lower Ganga Plain to the north, the Bay of Bengal to the east, the Tamil Nadu Plains to the south, and the Eastern Ghats to the west. The Utkal Plains are coastal lowlands consisting chiefly of Mahanadi delta deposits and marine sediments, and they merge with the Eastern Ghats at an elevation of about 250 feet. The plains have a nearly straight shoreline.

Paleogene and Neogene alluvium with patches of ancient Archean gneiss and sandstone, the plains are widest in the deltaic regions. Sand dunes of decomposed granites and zircon, created mainly by the action of wind at low tide, and lagoons are found along the Bay of Bengal. Chilka, the largest lake in the region, is salty; Samang and Sur are freshwater lakes. Littoral forests are found along the coast of the Cuttack and Balasore areas, and tropical moist deciduous forests are found inland throughout the regions near Puri and Cuttack. The Mahanadi, Brahmani, Baitarani, and Subarnarekha rivers are often subject to heavy flooding; the combined outflow of these rivers has formed the Mahanadi delta in the northern part of the plains. The region has fertile red and black soils.

The Andhra Plain:

It lies south of the Utkal Plain and extends upto Pulicat Lake, some 40 km north of Chennai. This lake has been barred by a long sand spit known as Sriharikota Island, on which is located the satellite launching station of the Indian Space Research Organisation.

The lagoon is about 60 km long and about 16 km wide in its widest part. The most significant feature of this plain is the delta formation by the rivers Godavari and Krishna. In fact, the two deltas have merged with each other and formed a single physiographic unit.

The combined delta has advanced by about 35 km towards the sea during the recent years. This is clear from the present location of the Kolleru Lake which was once a lagoon at the shore but now lies far inland. This part of the Andhra plain is quite wide. Andhra plain has straight coast and badly lacks good harbours with the exception of Vishakhapatnam and Machilipatnam.

The Tamil Nadu Plain:

It stretches for 675 km from Pulicat lake to Kanniyakumari along the coast of Tamil Nadu. Its average width is 100 km. The most important feature of this plain is the Cauvery delta where the plain is 130 km wide. The fertile soil and large scale irrigation facilities have made the Cauvery delta the granary of South India.

The expansive area of the eastern coastal plains that is the three broad divisions, mentioned above can be further divided into 6 regions:

1. Mahanadi Delta in Orissa
2. Southern Andhra Pradesh Plain
3. Krishna Godavari deltas
4. Kanyakumari Coast
5. Coromandel or Madras Coast in Tamil Nadu
6. Sandy Coastal regions

3. The Western Coastal Plain:

It is a narrow strip of land sandwiched between the Western Ghats and the Arabian Sea, ranging from 50 to 100 km in width. It extends from Gujarat in the north and extends through Maharashtra, Goa, Karnataka, and Kerala. Numerous rivers and backwaters inundate the region. Major rivers flowing into the sea are the Tapi, Narmada, Mandovi and Zuari.

Division of western coastal plain:

The Western Coastal Plain can be divided into following sub divisions:

- **The Kachchh Peninsula**
- **The Kathiawar Peninsula,**
- **The Gujarat Plains,**
- **The Konkan plain,**
- **The Karnataka Coastal Plain**
- **The Kerala Plain**

The Kachchh Peninsula: The Kachchh Peninsula, located between latitude 23.13°-24.68°N and longitude 68.10°-71.80°E, forms the western most part of India and constitutes the Kachchh district of Gujarat State. Occupying an area of 45,612 sq km, it has length and width extensions of 320 and 170 km, respectively through which passes the Tropic of Cancer. The delta land of Sindh, also known in the olden times by the name Sapta Sindhhu, or the seven distributaries of Indus River, borders it in the west. Its 352 km long southern margin is demarcated by the Gulf of Kachchh, which separates the peninsula from Saurashtra. Its northern margin makes the International border with Pakistan and the eastern abuts Gujarat Mainland. The district has a population of 1,526,321 people inhabiting 949 villages in ten Talukas, population density of 33-persons/sq km, and a total of 466,239 housing units.

The archaeological records reveal that the region was first inhabited by the people of Harappan civilization during 3000-1500 BC.

The Kathiawar Peninsula: It is also called Saurashtra Peninsula, peninsula in southwestern Gujarat state, west-central India. It is bounded by the Little Rann of Kachchh to the north, the Gulf of Khambhat to the east, the Arabian Sea to the southwest, and the Gulf of Kachchh to the northwest. From the northeast an ancient sandstone formation extends into the peninsula, which has an area of 23,000 square miles. Most of the sandstone, however, is masked by lavas. The area flanking the Gulf of Khambhat is largely alluvial.

Much of the peninsula is less than 600 feet above sea level, but the Girnar Hills and the isolated Gir Range reach top elevations of 3,665 feet and 2,110 feet, respectively. The natural vegetation of the dry, hot region is mainly thorn forest, but mangrove stands are common in low-lying areas near the sea. Gir National Park in the south contain the last wild Indian lions, and other wildlife abounds. Agriculture is the chief

occupation on the peninsula; the principal crops raised include wheat, millet, peanuts and cotton. Bhavnagar is the principal port and city.

The Gujarat Plains: It is vast plains area of central Gujarat state, western India. The plains extend over about 12,800 square miles and are bounded by the desert fringe of Rajasthan state to the north, the hills of eastern Gujarat to the east, the Arabian Sea to the south, and the Kathiawar Peninsula to the west. The region is a projection of the alluvial Sindhu-Ganges Plains sloping from north to south and has an average elevation of about 80 feet .

The plains are the outcome of extensive Pleistocene sedimentation and are drained by the Sabarmati, Mahi, Narmada, Tapi and Ambika rivers. Heavy flooding is common. Black soils occur in the west; elsewhere there are alluvial deposits and sandy loams. Forests consist mostly of acacia and teak. Agriculture is the economic mainstay; about one-sixth of India's cotton and about two-fifths of its tobacco are grown in the plains. Other crops include cereal grains, peanuts and oilseeds. Dairy farming is also important.

The Gujarat Plains are one of the most industrially developed areas in the country and produces textiles, diesel and gasoline engines, pumps, electrical equipment, iron and steel, petrochemicals, pharmaceuticals, cement, and clay building products. Ahmadabad is a centre of the cotton textile industry. Vadodara has a petroleum refinery and produces petrochemicals.

The Konkan plain: It is also called Aparanta, coastal plain of western India, lying between the Arabian Sea and the Western Ghats. The plain stretches approximately 330 miles from the Daman Ganga River north of Mumbai to the Terekhol River between Maharashtra and Goa states and Daman and Diu union territory in the south. Between 28 and 47 miles in width, the Konkan includes the regions of Thane, Greater Mumbai, Raigarh, and Ratnagiri.

The region is traversed by seasonal rivers that drain the heavy monsoonal rainfall from the crest of the Sahyadri Hills. The generally uneven terrain is composed of eroded remnant ranges of the Ghats that form low lateritic plateaus in the west and terminate in a coastline of alternating bays and headlands. Only about one-third of the land is cultivable, and the population lives mainly in the relatively fertile river valleys near the coast and in the newly developed industrial belts around Mumbai, Thane, Khopali, and Panvel. The barren hills are occupied by the pastoral Bhil, Kathkari, and Kokana

peoples. The main crops are rice, pulses, vegetables, fruits, and coconuts; fishing and salt manufacture are also important.

The industrial complex of Greater Mumbai is the primary economic focus of the region. Nearly all trade is carried on with Mumbai, and steady migration to the city has left rural Konkan depleted of manpower and skilled workers. Iron and manganese are mined and exported through the port of Reddi.

The ports of the Konkan were known to the ancient Greeks and Egyptians and to Arab traders. The spice trade brought prosperity to the ancient Hindu kingdoms of the area. The cave temples of Elephanta Island and Kanheri bear testimony to the prosperous culture of this era. With the advent of the Portuguese and British, the port cities were further developed and fortified but now have lost their former importance.

The Karnataka Coastal Plain: The Karnataka Coastal Plain from Goa to Mangalore is about 225 km long. It is a narrow plain with an average width of 30-50 km, the maximum being 70 km near Mangalore. The central part of this plain is crossed by numerous spurs projecting from the Ghats.

These spurs approach so close to the coast that the breadth of the lowland is reduced to 5-7 km at 14°N latitude where the Ghat's crest is only 13 km away from the sea. Running like ridges, the spurs attain heights of more than 600 m. near the Ghats.

At some places the streams originating in the Western Ghats descend along steep slopes and make waterfalls. The Sharavati while descending over such a steep slope makes an impressive waterfall known as Jog Falls which is 271 m high. Marine topography is quite marked on the coast.

The Kerala plain: It is narrow strip of coastland, southwestern India, fronting the Arabian Sea to the west and constituting almost all of Kerala state and most of the Malabar Coast. Narrow in the north and wide in the south, the plains are about 330 miles long and from 12 to 60 miles wide, covering an area of about 11,000 square miles. The plains are indented by numerous shallow lagoons, known as *kayes*, that are formed by *teris*. The sandy beaches are covered with coconut palms. According to the Purana, the region, also known as Parashurama Kshetram, was reclaimed from the sea by the sage Parashurama. The Kerala Plains lie below 33 feet, with hills of the Western Ghats, the Nilgiri, and the Southern Ghats to the east.

Many streams crisscross the plains and serve as inland waterways, constituting about one-fifth of India's total length of waterways. The Periyar River is the most important river that crosses the plains.

4. Significance of the Coastal Plains:

Large parts of the coastal plains of India are covered by fertile soils on which different crops are grown. Rice is the main crop of these areas. Coconut trees grow all along the coast. The entire length of the coast is dotted with big and small ports which help in carrying out trade.

About 98% of our international trade is carried through these ports. The sedimentary rocks of these plains are said to contain large deposits of mineral oil. The sands of Kerala coast have large quantity of monazite which is used for nuclear power. Fishing is an important occupation of the people living in the coastal areas. Low lying areas of Gujarat are famous for producing salt.

Conclusion: Coastal Plains are characterized by an area of flat low lying land that is situated adjacent to a water body often a sea or ocean. The Coastal Plains are separated from the interior of the larger land mass by unique features