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# Geographical Setting

## Emergence of India

The Indian subcontinent emerged as a separate geographical unit some 40 million years ago. Originally peninsular India, together with Antarctica, Africa, Arabia, and South America, is considered to have been a part of the southern super-continent called Gondwanaland. Earlier, Gondwanaland, together with the northern super-continent Laurisia, comprising North America, Greenland, Europe, and most of Asia north of the Himalayas, formed a single land mass called Pangaea. Then Gondwanaland and Laurisia became separate units. Due to tectonic movements different parts began to break away from Gondwanaland, giving rise to separate geographical units including peninsular India. This process began around 225 million years ago, and 40 million years ago India became a separate unit. India moved north to join the Eurasian continent sometime between 58 and 37 million years ago. In comparison to earlier dates, India's Himalayan boundary is very young. The uplift of the Himalayas took place in four phases. The last and the final uplift took place in the Pleistocene epoch, that is, in *c*. 2 million–12000 BC. The Himalayas played an important part in forming the Indo-Gangetic plains through its rivers which brought down alluvial deposits in the Pleistocene epoch. The Indian subcontinent is as large in area as Europe without Russia, with a total area of 4,202,500 sq. km. The subcontinent is divided into five countries: India, Bangladesh, Nepal, Bhutan, and Pakistan. India has nearly 1000,000,000 people. It comprises twenty-eight states and seven union territories, including the National Capital Territory of Delhi. Some of its states are larger than many European countries.

## The Role of the Monsoon

The Indian subcontinent is a well-defined geographical unit and is largely situated in the tropical zone. The monsoon has played an important role in India's history. The south-west monsoon lasts between June and October and brings rain in varying degrees to major parts of the country. In ancient times, irrigation was not an important factor and rains played a crucial role in agriculture. What is known today as the *kharif* crop in north India depended primarily in ancient times on the south-west monsoon. In winter, the western disturbances bring rains to northern India where wheat, barley, and the like constitute the main crop. A part of the peninsular India, particularly the coastal areas of Tamil Nadu, gets its major rainfall from the north-east monsoon from mid-October to mid-December. Once the direction of the monsoon was discovered some time around AD first century, traders sailed with the south-west monsoon from western Asia and the Mediterranean area, and came to India and Southeast Asia. They returned westward with the arrival of the north-east monsoon. The discovery of the monsoon enabled India to carry on trade and establish cultural contacts with western Asia and the Mediterranean area as well as with Southeast Asia.

## The Northern Boundaries

India is bounded by the Himalayas on the north and seas on the other three sides. The Himalayas protect the country against the cold arctic winds blowing from Siberia through Central Asia. This keeps the climate of northern India fairly warm throughout the year. As the cold is not very severe in the plains, people do not need heavy clothing and can live in the open for longer periods. Secondly, the Himalayas are sufficiently high to shield India against invasions from the north. This was specially true in pre-industrial times when communications were very difficult. However, on the north-west, the Sulaiman mountain ranges, which are a southward continuation of the Himalayas, could be crossed through the Khyber, Bolan, and Gomal passes. The Sulaiman ranges are joined southward in Baluchistan by the Kiarthar ranges which could be crossed through the Bolan pass. Through these passes, two-way traffic between India and Central Asia has continued from prehistoric times onwards. Various peoples from Iran, Afghanistan, and Central Asia came to India as invaders and immigrants, and vice versa. Even the Hindu Kush, the westward extension of the Himalayan system, did not form an insuperable barrier between the Indus and the Oxus

systems. The passes facilitated trade and cultural contacts between India, on the one hand, and Central Asia and West Asia, on the other.

Nestled in the Himalayas are the valleys of Kashmir and Nepal. Surrounded on all sides by high mountains, the valley of Kashmir developed its own way of life, but could be reached through several passes. Its winter compelled some of its people to go to the plains and its summer attracted the shepherds from the plains. Economic and cultural interaction between the plains and the valley was continuing. The Pamir plateau did not prevent it from becoming a transmission centre of Buddhism to the adjacent areas of Central Asia. The valley of Nepal, smaller in size, is accessible to the people of the Gangetic plains through a number of passes. Like Kashmir, it too became a centre for the cultivation of Sanskrit; both these valleys became repositories of the largest number of Sanskrit manuscripts.

The foothills of the Himalayas lent themselves to easier clearance than the jungles on the alluvial soil of the plains. It was easy to cross rivers in these areas because of their narrower width, and hence the earliest routes skirted along the foothills of the Himalayas from the west to the east and vice versa. It was therefore natural that the earliest agricultural settlements were founded in the foothills and uplands, and trade routes followed the terai route.

## Rivers

The heart of historical India is formed by its important rivers which are swollen by the tropical monsoon rains. These consist of the plains of the Indus system, the Indo-Gangetic divide, the Gangetic basin, and the Brahmaputra basin. Proceeding from west to east we find the annual rainfall gradually increasing from 25 cm to over 250 cm. The Indus vegetation based on 25 to 37 cm rainfall and possibly the western Gangetic vegetation based on 37 to 60 cm rainfall could be cleared with stone and copper implements and made fit for cultivation, but this was not possible in the case of the mid-Gangetic vegetation based on 60 to 125 cm rainfall, and certainly not in the case of the lower Gangetic and Brahmaputra vegetation based on 125 to 250 cm rainfall. The thickly forested areas, which also had hard soil, could be cleared only with the aid of iron implements which became available at a much later stage. Therefore, the natural resources of the less rainy western area were utilized first, and large-scale human settlements generally spread from west to east.

Once brought under cultivation, the Indus–Gangetic plains produced rich

crops and supported successive cultures. The Indus and the western Gangetic plains principally produced wheat and barley, while the middle and lower Gangetic plains largely produced rice, which also became the staple diet in Gujarat and south of the Vindhyas. The Harappan culture originated and flourished in the Indus Valley; the Vedic culture originated in the North-West Frontier Province and the Punjab, and flourished in the western Gangetic basin; the post-Vedic culture, mainly based on the use of iron, throve in the mid-Gangetic basin. The lower Gangetic valley and north Bengal really came into focus in the age of the Guptas; and finally, the Brahmaputra valley covering Assam gained importance in early medieval times. Powerful rulers fought for the possession of these plains and valleys, and the Ganga–Yamuna doab in particular proved to be the most coveted and contested area.

The rivers served as arteries of commerce and communications. In ancient times it was difficult to build roads, and so men and material were moved by boat. The river routes, therefore, well-served military and commercial transport. Evidently the stone pillars built by Ashoka were transported to different parts of the country by boat. The importance of rivers for communications continued till the days of the East India Company. Besides, the rivers inundated the neighbouring areas and made them fertile; they also supplied water to the canals cut from them. However, they caused heavy floods which periodically inundated and destroyed towns and villages in the northern plains, and therefore many ancient buildings were totally washed away and destroyed. Nevertheless, important towns and capitals, such as Hastinapur, Prayag, Varanasi, and Pataliputra were situated on the banks of the rivers. In modern times, urban sites are located at railway and road junctions or in industrial or mining zones, but in pre-industrial times towns were mostly situated on river banks and junctions.

Above all, it was the rivers that demarcated political and cultural boundaries, which were also formed by mountains. Thus, in the eastern part of the Indian peninsula, the area known as Kalinga, covering the coastal belt of Orissa, was situated between the Mahanadi to the north and the Godavari to the south. Similarly, Andhra Pradesh largely lay between the Godavari to the north and the Krishna to the south. The deltaic plains formed by these two rivers at their mouths shot into prominence by the beginning of the Christian era when they became studded with towns and ports under the Satavahanas and their successors. Finally, a major part of Tamil Nadu was situated between the Krishna to the north and the Kaveri to the south. The Kaveri valley extended in the south roughly to the Vaigai river, and in the north to the south Pennar river. It formed a distinct geographical zone and became the seat of the Chola power a

little before the beginning of the Christian era. This area was different from north Tamil Nadu, which consisted of uplands and came into prominence under the Pallavas in the fourth–sixth centuries. The eastern part of the peninsula is bounded by the Coromandel coast. Although the coastline is flanked by the Eastern Ghats or steps, the ghats are not very high and have several openings caused by the eastward flow of the rivers into the Bay of Bengal. Thus communication between the eastern coast, on the one hand, and other parts of Andhra and Tamil Nadu, on the other, was not difficult in ancient times. The port cities of Arikamedu (modern name), Mahabalipuram, and Kaveripattanam were situated on the Coromandel coast.

The western part of the peninsula does not have such distinct regional units. We can, however, locate Maharashtra between the Tapi (or Damanganga) to the north and the Bhima to the south. The area covered by Karnataka seems to have been situated between the Bhima and the upper regions of the Krishna to the north and the Tungabhadra to the south. For a long time, the Tungabhadra provided a natural frontier between the warring powers to its north and south. Just as the Chalukyas of Badami and the Rashtrakutas found it difficult to extend their sway to the south of the Tungabhadra, so also the Pallavas and Cholas found it difficult to extend their authority to its north. The coastal area in the extreme south-west of the peninsula was covered by the modern state of Kerala. The sea coast along the western part of the peninsula is called the Malabar coast. Although the coast came to have several ports and small kingdoms, communications between the coast and the adjoining areas of Maharashtra, Karnataka, and Kerala were rendered difficult by the Western Ghats with difficult passes to cross.

In between the Indus and the Gangetic systems to the north and the Vindhya mountains to the south lies a vast stretch of land which is divided into two units by the Aravalli mountains. The area west of the Aravallis is covered by the Thar desert, although a part of Rajasthan also lies in this region. The vast expanse of the desert made human settlements impossible in ancient times. However, a few fertile oases scattered in the desert were settled, and from early times it has been possible to cross the desert on camels. The south-eastern portion of Rajasthan has been a comparatively fertile area since ancient times, and because of the existence of the Khetri copper mines in this region, it came to be settled in the Chalcolithic period.

Rajasthan shades off into the fertile plains of Gujarat, which are irrigated by the waters of the Narmada, Tapi, Mahi, and Sabarmati. Situated at the end of the north-western portion of the Deccan plateau, Gujarat includes the less rainy

Kathiawar peninsula. The coastal area of this state is fairly indented, and therefore suitable for the establishment of several harbours. Therefore, since ancient times, Gujarat has been famous for its coastal and foreign trade, and its people have proved to be enterprising traders.

South of the Ganga–Yamuna doab, and bounded by the Chambal river to the west, the Son river on the east, and the Vindhya mountains and the Narmada river to the south, lies the state of Madhya Pradesh. Its northern part consists of fertile plains. At present, MP is the largest state in the country, and can be broadly divided into two parts, eastern and western. The eastern part, mostly covered by the Vindhyas, became historically important in Gupta times in the fourth and fifth centuries. However, western MP includes Malwa, which has been the scene of historical activities from the sixth century BC onwards. Malwa served as an important hinterland for the Gujarat ports, and many wars were fought between the Deccan and the northern powers for the possession of Malwa and Gujarat. The Shakas and the Satavahanas fought for the possession of this key area in the first and second centuries, and the Marathas and the Rajputs in the eighteenth century.

## Natural Frontiers and Cultural Contacts

Each of the areas bounded by rivers, in some cases by mountains, and sometimes with deltas and plateaus, constituted a political and administrative unit in which different ruling dynasties rose and fell. On account of difficult communications in a vast country and the defensibility of the natural frontiers, it was not easy for the ruling class of one region to establish its control over all the other regions. Gradually every region grew into a distinct cultural unit with its own style of life and language. However, in northern and western India, most languages were derived from the same Indo-Aryan stock, and hence had many elements in common. What is also important is that virtually throughout India Sanskrit came to be cultivated and understood.

The Vindhya mountains cut right across India from west to east and formed a boundary between north and south India. The speakers of the Dravidian languages lived south of the Vindhyas, and of the Indo-Aryan languages north of them. In between lived tribal peoples in the Vindhya regions where they are still found. The coastal areas along the Eastern and Western Ghats attracted settlers and traders, and the south was engaged in flourishing foreign trade. The Vindhyas do not constitute insurmountable barriers. In ancient times, despite the

difficulties of communications, people moved from north to south, and vice versa. This led to a give and take in culture and language. Repeatedly, the northern powers moved down to the south and the southern rulers moved up to the north. So too did traders, missionaries, and cultural leaders, particularly the brahmanas. This two-way traffic was continuing and helped the development of a composite culture.

Although most regions had well-defined natural frontiers, not every region possessed the resources necessary to sustain livelihoods in isolation. Therefore, from prehistoric times onwards, the common need for metals and other resources produced a network of interconnection between the different regions of the country.

## Minerals and Other Resources

The exploitation of the natural resources of India has an important bearing on its history. Until human settlements developed on a large scale, given the heavy rainfall, substantial areas of the Indian plains abounded in thickly forested areas which provided game and supplied forage, fuel, and timber. In early times, when burnt bricks were not much in use, timber houses and palisades were constructed. They have been found in Pataliputra, India's first important capital. For construction and tool-making, all kinds of stones, including sandstone, are available in India. The earliest human settlements are naturally found in the hilly areas and in those river valleys that are situated between the hills. In historical times, more temples and pieces of sculpture were made of stone in the Deccan and south India than in the plains of northern India.

Copper is widely distributed in India. The richest copper mines are located in the Chhotanagpur plateau, particularly in Singhbhum district. The copper belt is about 130 km long and shows many signs of ancient workings. The earliest people who used copper implements in Bihar exploited the copper mines of Singhbhum and Hazaribagh, and many copper tools have been discovered in south Bihar and parts of MP. Rich copper deposits are also to be found in the Khetri mines in Rajasthan. These were tapped by both pre-Vedic and Vedic people, who lived in areas now covered by Pakistan, Rajasthan, Gujarat, and the Ganga–Yamuna doab. Numerous copper belts have been found in the Khetri zone, and they seem to belong to a period anterior to *c*. 1000 BC. As copper was the first metal to be used, it is invested by Hindus with great purity, and utensils made of it are used in religious rituals.

India today produces virtually no tin and this was scarce even in ancient times. There is reason to believe that it was found in Rajasthan, south MP, and Bihar, but the deposits have been virtually exhausted. As bronze is made by mixing tin with copper, we do not find many bronze objects in prehistoric times. The Harappans possibly procured some tin from Rajasthan but their main supply came from Afghanistan, and even this was limited. Hence, although the Harappa people used bronze tools, their number in comparison to those found in western Asia, Egypt, and Crete is very small, and their tools contain a smaller percentage of tin. Therefore, the major part of India had no proper Bronze Age, that is, an age in which tools and implements were largely made of bronze. Starting with the early centuries of the Christian era, India developed intimate connections with Myanmar and the Malay peninsula which had an abundance of tin. This made possible the use of bronze on a large scale, especially for statues of the gods in south India. Tin for the Bihar bronzes of Pala times was possibly obtained from Gaya, Hazaribagh, and Ranchi, for in Hazaribagh tin ores were smelted till the middle of the last century.

India has been rich in iron ores, which are found particularly in south Bihar, eastern MP, and Karnataka. Once the art of smelting using bellows (making steel) was learnt, iron could be used for war, and more usefully to clear jungles and for deep and regular cultivation. The formation of the first empire in Magadha in the sixth to fourth centuries BC owed much to the availability of iron just south of this region. The large scale use of iron made Avanti, with its capital at Ujjain, an important kingdom in the sixth and fifth centuries BC. The Satavahanas and the other dynasties that arose south of the Vindhyas may have exploited the iron ores of Andhra and Karnataka.

Andhra possesses large lead resources, which explains the large numbers of lead coins in the kingdom of the Satavahanas, who ruled over Andhra and Maharashtra in the first two centuries of the Christian era. Lead may have also been obtained from towns in Rajasthan.

The earliest coins, called punch-marked coins, were made largely of silver, although this metal is rarely found in India. However, silver mines existed in early times in the Kharagpur hills in Monghyr district, and they are mentioned as late as the reign of Akbar. This accounts for the use of the white metal in the earliest punch-marked coins found in Bihar.

Large quantities of gold dust, which were carried by river streams from the Himalayas, were collected from the deposits of river channels in the plains. These deposits are called placers. Gold is found in the Kolar goldfields of Karnataka. A very early trace of gold has been found at a new Stone Age site of

around 1800 BC in Karnataka. We have no indication of its exploitation till the beginning of the second century AD. Kolar is considered to be the earliest capital of the Gangas of south Karnataka. Much of the gold used in early times was obtained from Central Asia and the Roman empire. Gold coins, therefore, came into regular use during the first five centuries of the Christian era. As the local resources were insufficient to maintain the gold currency over a long spell of time, once the supply from outside stopped, gold coins became rare.

In ancient times, India also produced a variety of precious stones, including pearls, especially in central India, Orissa, and south India. Precious stones formed an important item of trade in articles which were eagerly sought for by the Romans in the early centuries of the Christian era.

## Chronology

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| (BP) | |
| 40 m years | Emergence of the Indian subcontinent. |
| 2 m–1200 | The last phase of the uplift of the Himalayas. |
| (BC) | |
| 1800 | Early trace of gold in Karnataka. |
| 1000 | Earliest date of the Khetri copper belts. |
| (AD) | |
| 1 C | Discovery of the direction of the monsoon. |