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Indian Geography: A Brief Review

Dr. Neeraj Chauhan, Assistant Professor, Department of Geography, Govt. College Ateli (Mahendergarh) Haryana
dr.neechahes@gmail.com

Abstract

India's topography is incredibly varied, with terrain that includes deserts, plains, hills, and plateaus in addition to snow-capped mountain ranges. The majority of the Indian subcontinent, which is located on the Indian Plate, the northernmost part of the Indo-Australian Plate, belongs to India. The majority of India is located on a peninsula in southern Asia that extends into the Indian Ocean, and it has a coastline that is almost 7,000 kilometres (4,300 miles) long. The Arabian Sea and the Bay of Bengal both border India's southwest and southeast, respectively. Most of northern, central, and eastern India is covered by the productive Indo-Gangetic plain, whereas most of southern India is covered by the Deccan Plateau. The Thar Desert, which consists of a mixture of stony and sandy desert, is located to the west of the nation. The tall Himalayan range forms India's east and northeastern boundary. Due to a territorial dispute with Pakistan, the highest point in India is debatable. India asserts that K2, at 8,611 m, is the highest point in the country (28,251 feet). Kangchenjunga, at 8,598 m, is the highest point in uncontested Indian territory (28,208 feet). The climate varies from equatorial in the deep south to tundra in the elevations of the Himalayas.

Key word: Physiography of India, Climate of India, Water Resources and Drainage Pattern, Geographical Position, Indian Peninsula, Method: Recycle and reuse of water, Drip irrigation, Lepa method.

Introduction

The largest democracy in the world, the land also known as Bharat or Hindustan is unique with its incredible diversity, both culturally and physically. The second largest populous coun- try, India is home to around 17.5 per cent of world's population. The country, however, ac- counts for 2.42 per cent of the total world area. India is a land of contrast of relief and climate. Geographically India is a penin sular extension of the great Eurasian land- mass. Climatologically India comes in tropical,sub tropic and temperate regimes. India is basically a tropical country although its northern part is situated in the temperate belt. In the south, the Indian coasts are washed by the Arabian Sea and the Bay of Bengal branches of the Indian Ocean which give it a typical tropical monsoon climate. Water is essential for human civiliza tion, living organisms, and natural habitat. It is used for drinking, cleaning, agriculture, transportation, industry, recre- ation, and animal husbandry, producing elec- tricity for domestic, industrial and commercial use. Due to its multiple benefits and the problems created by its excesses, shortages and quality deterioration, water as a resource re- quires special attention. Soil is the topmost layer of the earth's sur- face. It consists of a mixture of minute particles of disintegrated rocks, minerals, organic matter and bacteria. Soil is formed when forces of nature such as temperature, rain, wind, waves, animals and plants act on rocks and break them into tiny pieces over a long period of time. Each type of soil benefits different types of crops through their unique physi- cal, chemical and biological properties. Alluvial soil is a fertile soil rich in potas- sium. It is highly suitable for agriculture, especially for crops such as paddy, sug- arcane and plantain. Red soil has high iron content and is fit for crops like red gram, Bengal gram, green gram, ground- nut and castor seed. Black soil is rich in calcium, potassium and magnesium but has poor nitrogen content. Crops like cotton, tobacco, chilly, oil seeds, jowar, ragi and maize grow well in it. Sandy soil is low in nutrient content but is useful for growing trees such as coconut, cashew and casuarinas in areas with high rainfall. Agriculture has been a way of life and continues to be the single most important live- lihood of the masses. Agricultural policy focus in India across decades has been on self-suffi- ciency and self-reliance in foodgrains produc- tion. Considerable progress has been made on this front. Foodgrains production rose from 52 million tonnes in 1951-52 to 244.78 million tonnes in 2010-11. The share of agriculture in real GDP has fallen given its lower growth rate relative to industry and services. However, what is of concern is that growth in the agricultural sector has quite often fallen short of the Plan targets. During the period 1960-61 to 2010-11, foodgrains production grew at a compounded annual growth rate (CAGR) of around 2 per cent.

In fact, the Ninth and Tenth Five Year Plans witnessed agricultural sectoral growth rate of 2.44 per cent and 2.30 per cent respec- tively compared to 4.72 per cent during Eighth Five Year Plan. During the XI Five Year plan, agriculture growth is estimated at 3.28 per cent against a target of 4 per cent.

Minerals are valuable natural resources be- ing finite and non-renewable. They constitute the vital raw materials for many basic industries and are a major resource for development. The history of mineral extraction in India dates back to the days of the Harappan civilization. The wide availability of the minerals in the form of abundant rich reserves made it very conducive for the growth and development of the mining sector in India. The country is endowed with huge resources of many metallic and non-metallic minerals. Mining sector is an important segment of the Indian economy. Since independence, there has been a pronounced growth in the mineral production both in terms of quantity and value. India started her quest for industrial devel- opment after independence in 1947.There has been many industrial policies in the country since that time, the latest being the New Indus- trial Policy of 1991. With three-fourths of India's population residing in rural areas, 60% of the labour force constitutes agricultural industry. The remaining 23% is in services and 17% is in industry.

A well-knit and coordinated system of trans- port plays an important role in the sustained economic development of a country. Develop- ment being a multi dimensional process; rests upon the resources of the region and infrastructural facilities like transport and com- munication. It is the transport which helps in movement of goods and materials from pro- ducer to consumer ends. The transport facility increases the linkage between backward and developed regions of the country thus reducing regional disparity among regions. The transport also helps in maintaining the uniformity in the prices, remove scarcity of goods during time of crisis, promotes national integration and cohe- siveness.

Population is the basic element of the state. With 1,210,000,000 (1.21 billion) people, India is currently the world's second largest country in terms of population representing a full 17.5% of the earth's population. India's 2011 census showed that the country's population had grown by 181 million people in the prior decade. When India gained independence from the United Kingdom sixty years ago, the country's population was a mere 350 million. Since 1947, the population of India has more than tripled. 1ndia's high population growth results in increasingly impoverished and sub-standard conditions for growing segments of the Indian population. Population plays an important role in economic development of the country. The human resource of the country if skilled and trained contribute to the growth whereas on the other hand illiterate and unskilled population full of ethnic and linguistic diversities acts as havoc for the nation. It may pose serious threat to the survival of mankind. Planning is a method of achieving economic prosperity by the optimum utilization of the resources of a region or country. Also it is an effort towards attaining self sufficiency and narrowing the inter and intra regional dispari- ties and preparing ideal conditions for development.A disaster is a natural or man-made hazard that causes significant physical damage or de- struction, loss of life, or drastic change to the environment. A disaster can be ostensively de- fined as any tragic event with great loss stem- ming from events such as earthquakes, floods, catastrophic accidents, fires, or explosions.

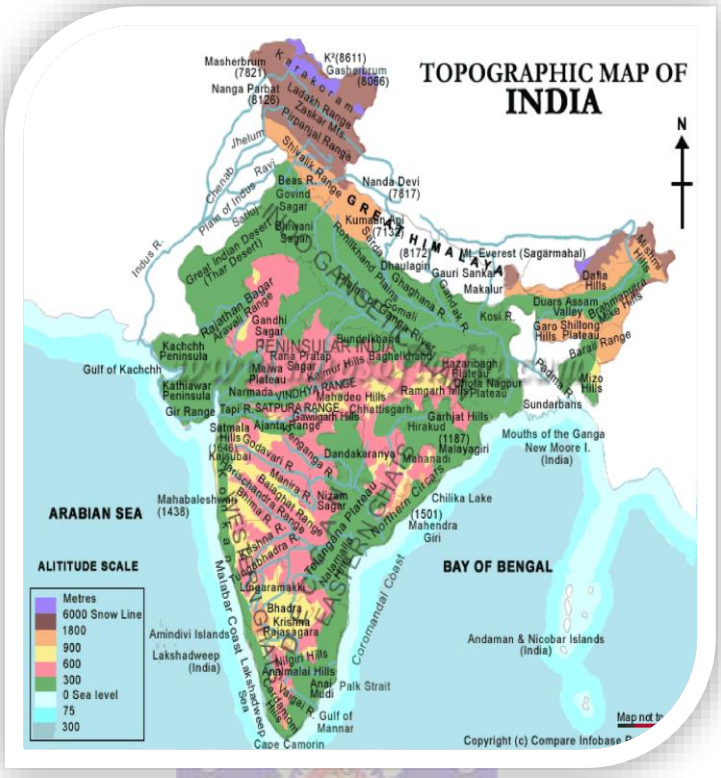
hysiography of India, Climate of India, Water Resources and Drainage Pattern

Physiography of India

GEOGRAPHICAL POSITION

In the northern region of the Indo-Australian Plate, India is entirely located on the Indian Plate. Between 8°4' and 37°6' North latitude and 68°7' and 97°25' East longitude, the nation is located north of the equator. With a total land size of 3,287,263 square kilometres, it is the seventh-largest country in the world (1,269,219 sq miles). India is 2,993 km (1,860 mi) from east to west and 3,214 km (1,997 mi) from north to south. India is bordered by the Indian Ocean in the south, the Bay of Bengal in the southeast, and the Arabian Sea in the southwest. The southernmost point of the Indian peninsula, which narrows before ending in the Indian Ocean, is Cape Comorin. Indira Point in the Andaman and Nicobar Islands is where India's

southernmost point is located. South of India lie the island republics of the Maldives, Sri Lanka, and Indonesia. Sri Lanka is divided from India by the Palk Strait and the Gulf of Mannar, which together constitute a narrow sea passage. From the relevant baseline, India's territorial waters stretch out into the ocean for a distance of 12 nautical miles (13.8 miles; 22.2 km). The Bay of Bengal and the Arabian Sea border the country's land on the south-east and southwest, respectively. Pakistan is located on the western border, and Bangladesh and Burma are to the east. Bhutan, Nepal, Tibet, and the Chinese territory of Sinkiang border her on the north. India and Sri Lanka are divided by the Palk Strait and the Gulf of Mannar.



Indian Territory includes the Andaman and Nicobar Islands in the Bay of Bengal and Lakshadweep in the Arabian Sea.

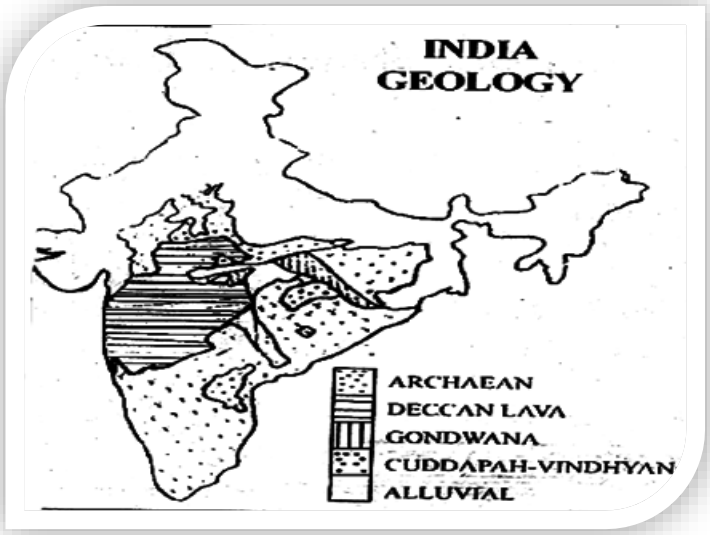
BOUNDARIES

The Indian Peninsula is bordered by the Indian Ocean on the south, the Bay of Bengal on the east, and the Arabian Sea on the west. The Maldives are off the southwest coast, whereas Sri Lanka is off the southeast coast. The Himalayan ranges are located in the subcontinent's north, north east, and north west. India shares borders with Afghanistan (106 km away) and Pakistan in the northwest, China, Nepal, and Bhutan in the north, Bangladesh, and Myanmar in the east. The distance between Bangladesh and India is 4,096.70 kilometres (2,546 miles). There are 92 Bangladeshi enclaves in India and 106 Indian enclaves in Bangladesh. In order for Bangladesh to have access to its Dehgram-Angalpota enclaves, a section of land that once belonged to India on the West Bengal-Bangladesh boundary has been leased to Bangladesh for an unlimited period of time. The real border between India and the People's Republic of China is known as the Line of Actual Control (LAC). It travels 4,057 kilometres through the Indian states of Arunachal Pradesh, Jammu & Kashmir, Uttarakhand, Himachal Pradesh, and Sikkim. The Aksai Chin region in northeastern Kashmir, which was taken by China during the Sino-Indian War of 1962, is claimed by both countries. The southern boundaries of India's northeastern states make up 1,643 kilometres (1,021 miles) of Burma's (Myanmar) border. India and Bhutan share a 699-kilometer border in the Himalayas (434 miles). In northern India, the boundary with Nepal stretches 1,751 kilometres (1,088 miles) along the foothills of the Himalayas.

GEOLOGY

The Pangaean Supercontinent once included the Indian Craton. On the south west coast, it was connected to Madagascar and southern Africa, while on the east coast, it was connected to Australia. Due to rifting, Pangaea split into the supercontinents Gondwana (to the south) and Laurasia during the Jurassic Period (to the north). The Indian Plate then moved toward the Eurasian Plate in a northerly direction. The Indian plate is thought to have separated from Madagascar at 90 Ma. The Tethys Ocean's closure is the subject of this ongoing investigation. This ocean's closing, which produced the Caucasus mountain range in western Asia and the

Alps in Europe, also produced the Himalaya Mountains and the Tibetan Plateau in South Asia. Parts of the Asian continent are deforming westward and eastward on each side of the orogeny as a result of the current orogenic event. In parallel with this collision, the Indian Plate fused with the nearby Australian Plate to form the Indo- Australian Plate, a new, larger plate.



reater/Inner Himalayas	Lesser/Middle Himalayas	Outer/Lower Himalayas
The highest mountain range of the Himalayas.	Situated to the south of the Himadri.	This is the outer most range to the south of the Lesser Himalayas.
These ranges have an averageheight of about 6000 m.	Average height is above3000 m	These discontinuous ranges jointhe lesser Himalayas in the extreme east.
Highest Mountain peaks are situated in this range. (e.g.Kanchanjunga - 8595m,Nangaparbat-8126m)	Many health resorts are situated on the southern slope of the mountain range, e.g.: Shimla, Darjeeling	Its average height is about 1200m
The source of Ganges andYamuna	----	There are several elongated and flat valleys running parallel to the moun tain ranges. They are called "duns". (e.g.: Dehradun)

Evolution of India

The earliest stage of tectonic history during the Archaean era (before 2.5 billion years ago) was distinguished by the cooling and solidification of the upper crust of the earth's surface, which is reflected by the exposure of gneisses and granites, especially on the Peninsula. The Indian craton is composed primarily of these. The Aravalli Range is a relic of the Aravalli-Delhi orogeny, an early Proterozoic orogeny that connected the two older portions of the Indian craton. From its northern end to solitary hills and rugged ridges in Haryana, where it ends up close to Delhi, it stretches for almost 500 kilometres. The major phase of orogen- esis is represented by minor igneous intrusions, deformation (folding and faulting), and subsequent metamorphism of the Aravalli Mountains.

PHYSIOGRAPHIC DIVISION

The four major geographical regions of India are:

1. The Great Himalayan range,
2. The Indo Gangetic Plain,

3. The Deccan Plateau and Peninsula 4. The Coastal plains
4. The Coastal plains
5. .The Islands

Climate of India

INDIAN MONSOON

Traditional explanation: According to Halley, the monsoon is caused by temperature disparities between continents and oceans caused by their differential heating. In the summer, the sun shines vertically over the cancer tropic, causing high temperatures and low pressure in central Asia, while the pressure over the Arabian Sea and the Bay of Bengal remains suitably high. As a result, India and her neighbouring countries experience heavy rains. This causes air to travel from the sea to land. The tropic of Capricorn receives vertical sunlight during the winter. The monsoon flow is reversed, and the northwestern region of India becomes colder than the Arabian Sea and the Bay of Bengal.

Water Resources and Drainage Pattern

WATER RESOURCES OF INDIA

One of a nation's most important resources is its water supply. India receives roughly 4000 km3 of precipitation each year. The absurdity of the situation is that Mousinram near Cherrapunji, which receives the most rainfall in the world, also experiences a water deficit during the dry season, virtually every year. The rainfall in India exhibits extremely high geographical and temporal variability. 1953 km3 is thought to be the average annual flow for all Indian rivers. 432 km3 are estimated to be the entire yearly replenishable groundwater resources. Groundwater is a significant supply of water for drinking, agriculture, industrial applications, etc., in addition to the water found in the numerous rivers in the nation. It supplies more than 45% of all irrigation in the nation as well as around 80% of the water needed for domestic use. according to international standards.

WATER CONSERVATION

Groundwater and Surface watermanagement

An efficient groundwater management strategy that promotes efficiency, equality, and sustainability is necessary to safeguard the aquifers from overexploitation. India has a huge rural population density and extremely scattered agricultural holdings. Regulation of groundwater resource use is necessary to ensure social equality, avoid using more groundwater than it can replenish. The Central and State Governments must take decisive action to prevent the negative environmental effects of excessive groundwater exploitation. To stop seawater from seeping into freshwater aquifers, excessive groundwater extraction should be avoided, especially close to the coast. Undoubtedly, a combined management strategy that combines governmental management with active citizen participation is a viable alternative.

Rain water harvesting

- The technique of capturing and storing rainfall for effective use and conservation to manage runoff, evaporation, and seepage is known as rainwater harvesting. The following are some advantages of rainwater collection: It increases water availability
- It checks the declining water table
- It is environmentally friendly
- It improves the quality of groundwater through dilution, mainly of fluoride, ni- trate, and salinity, and
- It prevents soil erosion and flooding, especially in the urban areas.

Method: Recycle and reuse of water, Drip irrigation, Lepa method

HIMALAYAN RIVER SYSTEMS

Important features:-

• Himalayan rivers provide as an excellent illustration of antecedent drainage since they existed before to the ascent of the Himalayas. The deep gorges of rivers like the Indus, Satluj,

Alaknanda, Bhagirathi, Brahmaputra, and Kosi are proof of it. Additionally, the most of them are not related to Himalayan relief.

• These rivers are perennial in nature because they are nourished by the Himalayas' heavy snowfall. They experience significant Rainfall and their highest discharge during the monsoon season.

• The geological instability and brittleness of the terrain result in numerous meandering or abrupt changes in their trajectories, as well as uncertainty and circumspection in their behaviour.

• Because the valleys are still developing, they are characterised by a variety of rapids, waterfalls, and cascades.

The Ganga River System

The Ganga originates as the Bhagirathi from the Gangotri glacier at Gaumukh, at an elevation of 7,010 m. Alaknanda, the other head- stream of Ganga, has its source in the Satopanth glacier near Badrinath. The Alaknanda consists of the Dhauli and the Vishnu Ganga which meet at Joshimath. The Alaknanda river meets-

- The Dhauliganga river at Vishnuprayag,
- The Pindar river at Karnaprayag,
- The Mandakini or Kali Ganga at Rudraprayag and finally
- The Bhagirathi river at Devprayag

From west to east, the Ramganga, Gomati, Ghaghara, Gandak, Kosi, and Mahananda rivers are listed.

The Yamuna the Yamnotri glacier on the western slopes of the Banderpunch range serves as the source of the Ganga's longest and most western tributary (6,330 m). In the Himalayas, it is joined by tiny streams including Rishiganga, Uma, and Hanuman Ganga. Close to Kalsi, tonnes join it. At Tajewala, it enters the plains. On its right bank, which flows from the penin- sular plateau, it is joined by the Chambal, the Sind, the Betwa, and the Ken. On its left bank, the Hindon, the Rind, the Sengar, and the Varuna join it.

The Chambal is a river that originates in the Janapao hills near Mhow in the Madhya Pradeshi Malwa plateau and flows through a gorge before entering Rajasthan at Kota, where the Gandhisagar dam has been built. It travels from Kota down to Bundi, Sawai Madhopur, and Dholpur before joining the Yamuna in the Etawah region of Uttar Pradesh. The Chambal ravines, a kind of badland terrain, are well known in the Chambal. The river spans 1,050 kilometres in total length. The Banas joins it at Sawai Madhopur.

The Sind originates in Vidisha plateau ofMadhya Pradesh. It flows for a distance of 415 km before joining Yamuna.

The Betwa rises in the Bhopal district and joins Yamuna near Hamirpur after traversing a distance of 590 km. The Dhasan is its important tributary.

The Ken is 360 km long river rising from theBarner Range of Madhya Pradesh. It joins Yamuna near Chila.

The Son is a large south bank tributary ofthe Ganga, originating in the Amarkantakplateau. After forming a series of waterfalls at the edge of the plateau, it turns northeast- ward. It reaches Arrah, west of Patna, to jointhe Ganga. The important tributaries of the Son are the Johilla, the Gopat, the Rihand, the Kanhar and the North Koel.

The Damodar occupies the eastern margins of the Chotanagpur Plateau where it flows through a rift valley and finally joins the Hooghly.The Barakar is its main tributary. Once knownas the 'sorrow of Bengal' for its devastating floods, the Damodar has been now tamed bythe Damodar Valley Corporation, a multipur-pose river project.

The Ramganga is a small river rising in the Garhwal hills near Kalagarh.It changes its course to the southwest direc- tion after crossing the Shiwalik and enters into the plains of Uttar Pradesh near Najibabad.

The Brahmaputra River System

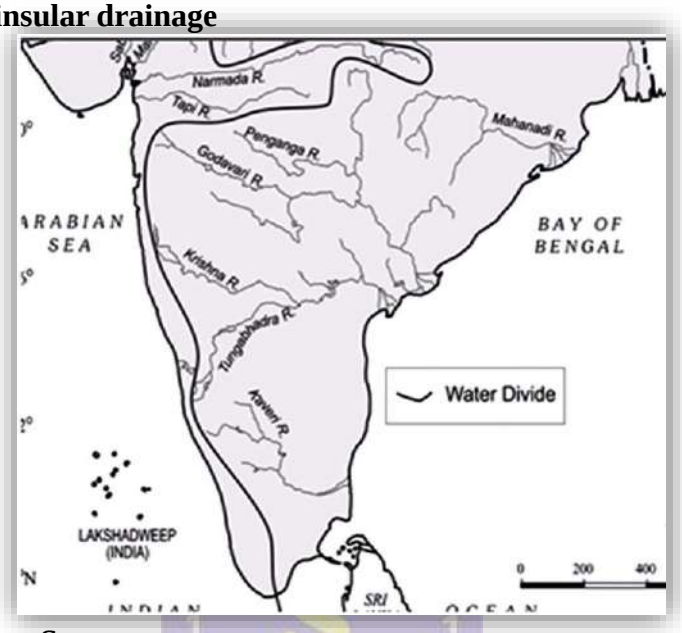
One of the world's biggest rivers, the Brahmaputra, originates in the Kailash range's Chemayungdung glacier. Its source is separated from the Mansarovar lake by Mariam La. From here, it travels about 1,200 kilometres eastward longitudinally across a barren, level area of

southern Tibet where it is known as the Tsangpo, which means "the purifier." The main tributary of this river from Tibet's north is the Rango Tsangpo. It carves out a deep valley in the Central Himalayas near Namcha Barwa before emerging as a turbulent and energetic river (7,756 m). The river, known by the names Siang or Dihang, emerges from the slopes. West of the Arunachal Pradesh town of Sadiya is where it enters India.

THE PENINSULAR DRAINAGE SYSTEM

The Himalayan drainage system predates the Peninsular one. The rivers are mature, and the broad, heavily graded shallow valleys are proof of this. Exceptions are the Tapi, which flows through the rift valley, and the Western Ghats, which lie near to the western coast and serve as a water divider between the main Peninsular and the Tapi.

Evolution of the peninsular drainage



The Peninsular River Systems

- The peninsular rivers originate at lower altitudes and drain areas which are geo-logically more stable and, therefore, are devoid of meanders.
- The river Channels have reached the base levels and have low gradients.
- Larger deltas are formed by larger rivers at their mouth (except those flowing towards west).
- The broad, largely graded and shallow valleys of the peninsular rivers indicate that they have existed for a much longer period than the Himalayan rivers.
- Most of the peninsular river flow towards the east because the main watershed lies in Western Ghats in close proximity to the west coast. Notable exceptions are Narmadaand Tapi, which flows in a direction op-posed to this general trend

The West Flowing Rivers of the Peninsula

The Narmada, the largest west flowingriver of the peninsula, originates on the western flank of the Amarkantak plateau at a height of about 1,057 m. Flowing in a rift valley between the Satpura in the south and the Vindhyan range in the north, it forms a picturesque gorge in Marble Rocks and Dhuandhar waterfall near Jabalpur. It makes other waterfalls at Mandhar, Dardi and Maheshwar (Sahasradhara Falls). After flowing a distance of about 1,310 km, it meets the Arabian sea south of Bharuch, form- ing a broad 27 km long estuary in the Gulf of Khambhat. Its catchment area is about 98,796sq. km. The Sardar Sarovar Project has been constructed on this river. The Hiran, the Orsang,the Barna and the Kolar are its major right bank tributaries. The major left bank tributaries are the Burhner, the Banjar, the Shar, the Shakkar, the Kundi and the Tawa.

The Tapi or the Tapti is the second largest westward flowing river. It is also known as 'The Twin' and 'The Handmaid' of the Narmada. It originates from Multai in the Betul district of Madhya Pradesh. It is 730 km long and drainsan area of 65,145 sq. km. Nearly 79 per cent ofits basin lies in Maharashtra, 15 per cent in Madhya Pradesh and the remaining 6

per centin Gujarat. Its main tributary is the Purna joining it near Bhusawal. Other tributaries are the Betul, the Patki, the Aner, and Gomai on the right bank and the Khursi, the Girna, the Bori and the Panjhara on the left bank.

The Luni is the largest river system of Rajasthan, west of Aravali. It originates near Pushkar in two branches, i.e. the Saraswati and the Sagarmati, which join with each other at Govindgarh. From here, the river comes out of Aravali and is known as Luni. It flows towards the west till Telwara and then takes a southwestdirection to join the Rann of Kuchchh. The entire river system is ephemeral.

The Sabarmati is the name given to the combined streams of the Sabar and the Hathmati.It rises from Mewar in Aravali range and falls into the Gulf of Khambhat. Its tributaries are theSedhi, the Meshwa, etc.

The Mahi rises in the Vindhyas and fallsinto the Gulf of Khambhat. Its drainage area is shared by Madhya Pradesh (19%), Rajasthan (47%), and Gujarat (34%). Its tributaries are the Som, the Anas and the Panam.

The West Flowing Rivers of the Sahyadris The paths of the rivers that flow toward the Arabian Sea are brief. These transport 18% of the nation's water supplies while draining 3% of India's land area. The Kalinadi in Karnataka rises in the Belgaum district and plunges into Karwar Bay. The Bedti River originates in Hubli Dharwar and flows for 161 kilometres. Another significant river in Karnataka that flows west is the Sharavati. It has its source in the Shimoga district and has a 2,209 sq. km. catchment area. The Sharavati created the famed Jog or Gersoppa Falls, which is the highest in India. In the Gujrat district of Rajkot, close to the Aniali village, the Bhadra begins. At a height of 670 metres, the Vaitarna rises from the Triambak in the Nasik district.

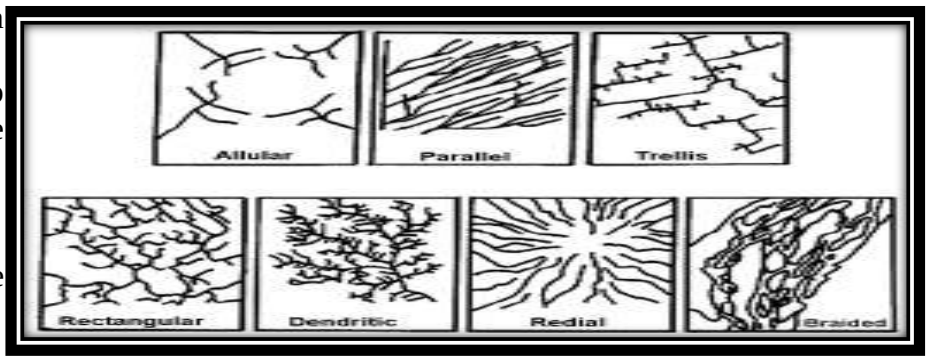
DRAINAGE PATTERNS

The arrangement of lakes, rivers, and streams within a certain drainage basin is known as a drainage system. They are controlled by the topography of the ground, the gradient of the land, and whether a particular area is dominated by hard or soft rocks.

Types of drainage system

Dendritic drainage system: Dendritic drainage systems are the most common form of drainage system. In a dendritic system, there are many contributing streams(analogous to the twigs of a tree), whichare then joined together into the tributaries of the main river (the branches and the trunk of the tree, respectively). They de-velop where the river channel follows the slope of the terrain. Dendritic systems form in V-shaped valleys; as a result, the rock types must be impervious and non-porous.

Parallel drainage system: A parallel drain- age system is a pattern of rivers caused by steep slopes with some relief. Because of thesteep slopes, the streams are swift and straight, with very few tributaries, and all flow in the same direction. This system forms on uniformly sloping surfaces, for example, rivers flowing southeast from the Aberdare Mountains in Kenya.



Trellis drainage system: The geometry ofa trellis drainage system is similar to thatof a common garden trellis used to grow vines. As the river flows along a strike valley, smaller tributaries feed into it from the steep slopes on the sides of mountains. These tributaries enter the main river at approximately 90 degree angles, causing a trellis-like appearance of the drainage sys- tem. Trellis drainage is characteristic of folded mountains, such as the Appala-chian Mountains in North America.

NATIONAL WATER POLICY 2012 Water is a natural resource that is essential for sustainable development, livelihood, and food security. It is a limited resource as well. Despite having 2.6% of the world's land area and more than 17% of the world's population, India only possesses 4% of the world's renewable water resources. Due to uneven distribution over both time and place, there are further restrictions on the amount of water that can be used. The amount of precipitation, which is limited to about three or four months per year, ranges from 100 mm in western Rajasthan to over 10,000 mm near Cherrapunji, Meghalaya. State boundaries are frequently crossed by rivers and subterranean aquifers. Rainfall, river flows, surface ponds and lakes, and ground water are all components of the one and indivisible resource that is water.

Geography: Teaching Over the past 50 years, there has been a slow but noticeable change in the philosophy, approach, and content of geography instruction. Under the direction and direction of native and American and European trained geographers, there has been a transition from qualitative to quantitative approach, from conventional cartography to computer aided cartography, from optical-manual to digital technology driven remote sensing and GIS. The primary reason of the illness that Indian geography is experiencing is the distortion of the British and American geographies that was imported by Indian geographers trained in two different traditions, which were dissimilar in their approaches and techniques. According to Gosal (1980), physical geography is being unfairly neglected in both teaching and research. The physical geography curriculum has to be expanded upon and refined in order to provide a thorough understanding of the physical resource base. Creating solid methods of analysis and synthesis in geography requires a comprehension of nature as a whole. Misra (1983) feels differently about how geography is taught in India now.

Conclusion

Resource mapping and utilisation have long used geography as a concept and tool. As a result of shifting paradigms, there has been continuous but slow change in its philosophy, methods, and content. Geographers have shared their opinions on a variety of topics, including teaching, training, research, identity, image, space, and the role that geographers play in society. Due to a change in emphasis from a physical to an economic foundation, Indian geographers were unable to contribute to the understanding and resolution of environmental issues on the educational front. The teaching of disciplinary structure, or the intellectual and methodological foundation, is also lacking. Lack of fieldwork is another issue that Indian geography has faced. Since there is no introduction course offered at the entry level, there is a lack of skill development, as has been recommended with proposed components, on the training front. Module orientation is required for orientation and refresher courses. Lack of creativity, unclear problem and objective statements, and reliance on secondary data have all been identified as issues in research. The discipline is also dealing with issues of exclusion from the mainstream under the guise of being multidisciplinary, invasion, and isolation. Finally, discussions about the agenda for new geographers gave the field its future shape.

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