

CHAPTER: 2

INDIA: STRUCTURE AND PHYSIOGRAPHY

PHYSIOGRAPHY

- ‘Physiography’ of an area is the outcome of structure, process and the stage of development.
- The land of India is characterised by great diversity in its physical features.
- Based on the variations, India can be divided into the following physiographic divisions:
 - i. The northern and north-eastern mountains
 - ii. The northern plain
 - iii. The Peninsular plateau
 - iv. The Indian Desert
 - v. The coastal Plains
 - vi. The Islands

I. The Northern and North-Eastern Mountains

- It consist of the Himalayas and the North eastern hills.
- The Himalayas consist of a series of parallel mountain ranges such as Greater Himalaya or Himadri, Lesser Himalaya or Himachal and the Shiwaliks.
- Length of the Himalayas – 2500km
- On the basis of relief, alignment of ranges and other geomorphological features, the Himalayas can be divided into the following sub-divisions.
 - a. Kashmir or North western Himalayas
 - b. Himachal and Uttarakhand Himalayas
 - c. Darjiling and Sikkim Himalayas
 - d. Arunachal Himalayas
 - e. Eastern Hills and mountains

a) Kashmir Himalaya

- ❖ Lies between rivers Indus and Ravi
- ❖ Hill ranges- karakoram, Ladakh, Zaskar, Pirpanjal
- ❖ Highest peak – Nanga Parbat
- ❖ Glaciers – Baltoro, Siachen
- ❖ Famous for Karewa formations, which are useful for the cultivation of saffron.
- ❖ Passes- Zojila on the great Himalayas, Banihal on the pirpanjal, Photula on the Zaskar, and the Khardung la on the ladakh
- ❖ Fresh water lakes- Dal and Wular
- ❖ Salt water lakes- Pangong Tso and Tso Moriri
- ❖ Rivers- Indus, Jhelum and Chenab

- ❖ Pilgrim centers – Vaishno Devi temple, Amarnath cave and charar-e-Sharif.
- ❖ The capital of Jammu Kashmir-Srinagar- is located on the banks of Jhelum

b) Himachal and Uttarakhand Himalayas

- ❖ Lies between rivers Ravi and Kali
- ❖ Rivers – Ravi, Beas, Sutlej, Yamuna and Ghaghara
- ❖ Hill stations- Dharamshala, Mussourie, Shimla
- ❖ Peak- Nanda Devi
- ❖ Important Duns- Dehra Dun, Kota Dun, Kalka Dun
- ❖ Localities – Bhotias
- ❖ Here lies the famous valley of flowers
- ❖ Pilgrim centers- Gangotri, Yamunotri, Kedarnath, Badrinath
- ❖ Panch prayags(river confluences)- Vishnu prayag, Devaprayag, Rudraprayag, Karnaprayag, nanda prayag

c) Darjiling and Sikkim Himalayas

- ❖ Relatively small, but the most significant part of the Himalayas
- ❖ Lies between Kali and Tista
- ❖ Known for its fast flowing river Tista
- ❖ Peak – Kanchenjunga- Highest peak in the Indian Himalaya
- ❖ Localities – Lepchas
- ❖ Absence of Shiwaliks
- ❖ Duar formations used for the development of tea gardens

d) Arunachal Himalayas

- ❖ Extend from Tista to Dihang
- ❖ Peaks-Kangtu, Namcha Barwa
- ❖ Rivers- kameng, Subansiri, Dihang, Dibang and Lohit
- ❖ Tribal communities- Monpa, Daffla, Abor, Mishmi, Nishi, and Nagas
- ❖ Agricultural type- Jhumming or shifting cultivation

e) Eastern Himalayas

- ❖ Lies in north-south direction
- ❖ Known by different names- Patkai Bum, Naga hills, Manipur hills, Mizo or Lushai hills.
- ❖ Barak river flows through Manipur and Mizoram
- ❖ Lake- Loktak(Manipur)
 - Keibul Lamjao- only floating national park in the world
- ❖ Mizoram is known as 'Molassis Basin'.

II. THE NORTHERN PLAINS

- Formed by the alluvial deposits brought by the rivers Indus, Ganges and Brahmaputra.
- Length- 3200 km from east to west
- Width- 150 to 300 km.
- Depth- 1000 to 2000 m.
- Mouth of these rivers form deltas. Eg: Sunderban Delta
- Important physiographic features – Sand bars, meanders, ox-bow lakes, braided channels, riverine islands.
- North Indian plain have a fertile soil cover.
- It supports a variety of crops.
- Supports a large population.
- Divided into three major zones
 - a. Bhabar
 - b. Tarai
 - c. Alluvial plains
 - i. Bhangar
 - ii. Khadar

a) Bhabar

- Narrow belt parallel to Shiwalik foothills
- Width- 8 to 10 km
- Zone of stream disappearance
- Streams and rivers coming from the mountains deposit heavy materials of rocks and boulders. So rivers disappear in this zone

b) Tarai

- Located south of Bhabar
- Width- 10 to 20 km
- Zone of re-emergence of rivers
- Marshy and swampy area
- Luxurious growth of vegetation
- Houses a variety of wild life

c) Bhangar

- Old alluvial deposits

d) Khadar

- Newer alluvial deposits

III. THE PENINSULAR PLATEAU

- ✓ An irregular triangular landmass south of northern plains.
- ✓ One of the oldest and most stable landmass of India
- ✓ Rich storehouse of minerals

- ✓ Average elevation- 600 to 900 m
- ✓ Boundaries
 - Northwest –Delhi ridge
 - East- Rajmahal hills
 - West – Gir range
 - South – Cardamom hills
- ✓ North east extension – Shillong and Karbi- Anglong plateau
- ✓ Made up of plateau plateaus such as
 - Hazaribagh plateau
 - Palamau plateau
 - Ranchi plateau
 - Malwa plateau
 - Coimbatore plateau
 - Karnataka plateau
- ✓ Important physiographic features – Tors, Block mountain, rift valleys, spur etc
- ✓ Black soil is prominent here.
- ✓ Divided into three groups.
 - a. The Deccan plateau
 - b. The central highlands
 - c. The North eastern plateau

A. The Deccan plateau

- ❖ Lies south of river Narmada
- ❖ Bordered by Western ghats in the west, Eastern ghats in the east, Satpura, Maikala ranges and Mahadeo hills in the north.
- ❖ Western ghats and Eastern ghats meet each other at the Nilgiri hills.

i. Western Ghats

- Locally known by different names
 - Sahyadri in Maharashtra
 - Nilgiri hills in Karnataka and Tamil nadu
 - Anamalai hills and Cardomom hills in Kerala
- They are higher in elevation
- They are continuous
- Average elevation- 1500m
- Highest peak – Anaimudi- 2695m – on the Anamalai hills
- Second highest peak – Dodabetta on the Nilgiris

ii. Eastern Ghats

- They are lower in elevation
- They are discontinuous

- Important ranges – Javadi hills, Palconda range, Nallamalai hills, Mahendragiri
- Highest peak – Mahendragiri

B. The Central Highlands

- ❖ Northern most boundary of Deccan plateau
- ❖ Bounded by- Aravalli in the west and Satpura in the south
- ❖ Elevation- 700 to 1000m
- ❖ Its eastern extension- Chota Nagpur plateau

C. The North Eastern plateau

- ❖ Known as Meghalaya- Karbi Anglong plateau
- ❖ Divided into three- the Garo hills, the Khasi hills and the Jaintia hills

Importance Of Peninsular Plateau

- Rich store house of minerals
- Black cotton soil in this region favours the cultivation of Cotton crop
- Forests of the plateau are valuable source of timber
- Rivers provide facility for generating hydroelectric power.
- Attracts tourists.

IV. THE INDIAN DESERT

- ❖ Lies to the northwest of Aravalli hills
- ❖ Important physiographic features – longitudinal dunes, barchans, mushroom rock, shifting dunes, oasis etc
- ❖ Receives low rainfall below 150mm per year
- ❖ It has arid climate
- ❖ Low vegetation cover
- ❖ Also known as Marusthali
- ❖ On the basis of orientation, the desert can be divided into two parts.
 - o Northern part –towards Sindh
 - o Southern part – towards Rann of kutch
- ❖ Only perennial river – Luni

V. THE COASTAL PLAINS

- ✓ On the basis of location, it can be broadly divided into two
 - o Western coastal plain
 - o Eastern coastal plain

1. Western coastal plain

- Submerged coastal plain
- Good for the development of ports and harbours
- Important natural ports: Kandla, Mumbai, Marmagoa, Mangalore, Cochin

- Divided into
 - Kacch and Kathiawar coast in Gujarat
 - Konkan coast in Maharashtra
 - Goan or Canara coast in Karnataka
 - Malabar coast in Kerala
- They are narrow in the middle and broader towards north
- Malabar coast has got Kayals
- Every year Nehru trophy vallamkali is held in Punnamada kayal in Kerala.

2. Eastern coastal plain

- Emerged coast
- Broader
- Have deltas – eg: deltas of Mahanadi, Godavari, Krishna and Kaveri
- Divided into two parts- Northern Circars and Coromondal coast

VI. THE ISLANDS

- ✓ There are two major island groups in India
 - 1) Lakshadweep in the Arabian sea
 - 2) Andaman & Nicobar in the Bay of Bengal

1) Lakshadweep

- ❖ Means a lakh islands
- ❖ A total of 36 islands, only 11 are inhabited
- ❖ Extends between $8^{\circ}\text{N} - 12^{\circ}\text{N}$ and $71^{\circ}\text{E} - 74^{\circ}\text{E}$
- ❖ Built of coral deposits
- ❖ Largest island – Minicoy (453 sq km)
- ❖ Divided into two parts
 - Amini island on the North
 - Cannanore island on the south
- ❖ Eleventh degree channel- separates Amini from Cannanore group
- ❖ Capital- Kavarathi

2) Andaman and Nicobar islands

- ❖ Extends between $6^{\circ}\text{N} - 14^{\circ}\text{N}$ and $92^{\circ}\text{E} - 94^{\circ}\text{E}$.
- ❖ Total 572 islands
- ❖ Divided into two broad categories
 - a) The Andaman in the North
 - b) The Nicobar in the South
- ❖ Ten degree channel separates Andaman group from Nicobar
- ❖ Islands are volcanic in origin
- ❖ Barren island- only active volcano in India is in Nicobar islands

- ❖ Important peaks – Saddle peak, Mount Diavolo, Mt. Koyob, Mt. Thuiller

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