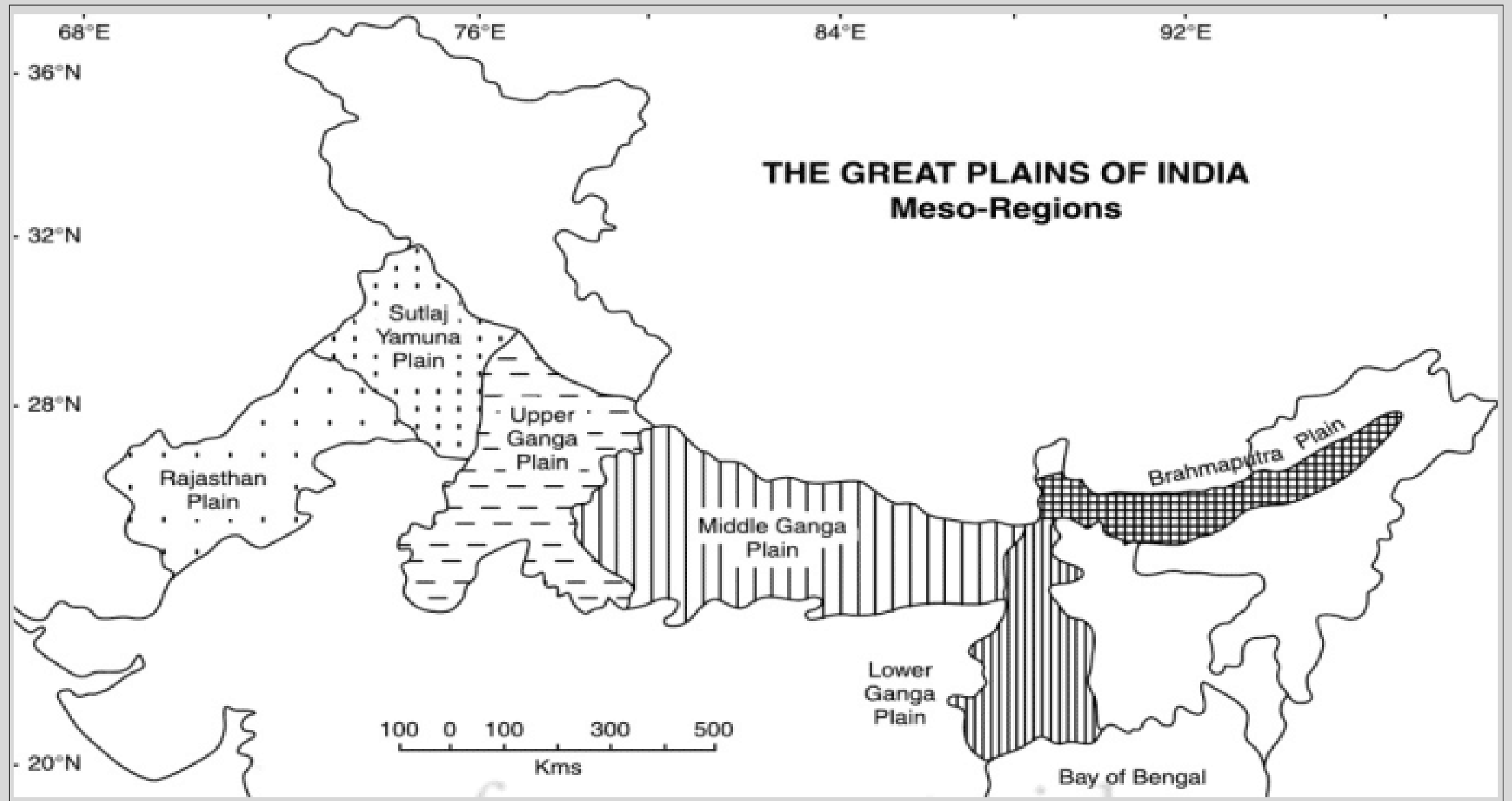


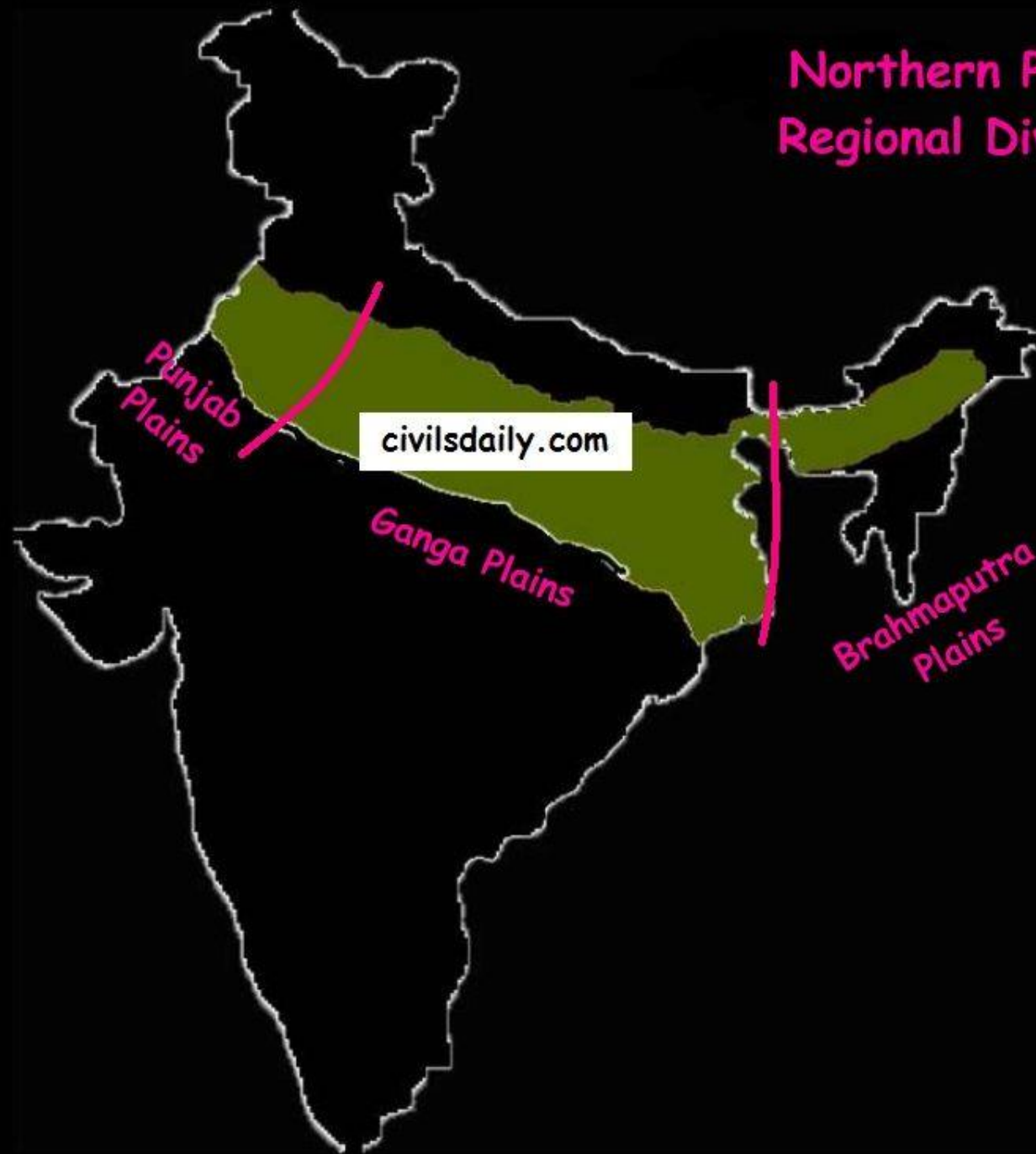


INDIA

Dr. Upma Chaturvedi

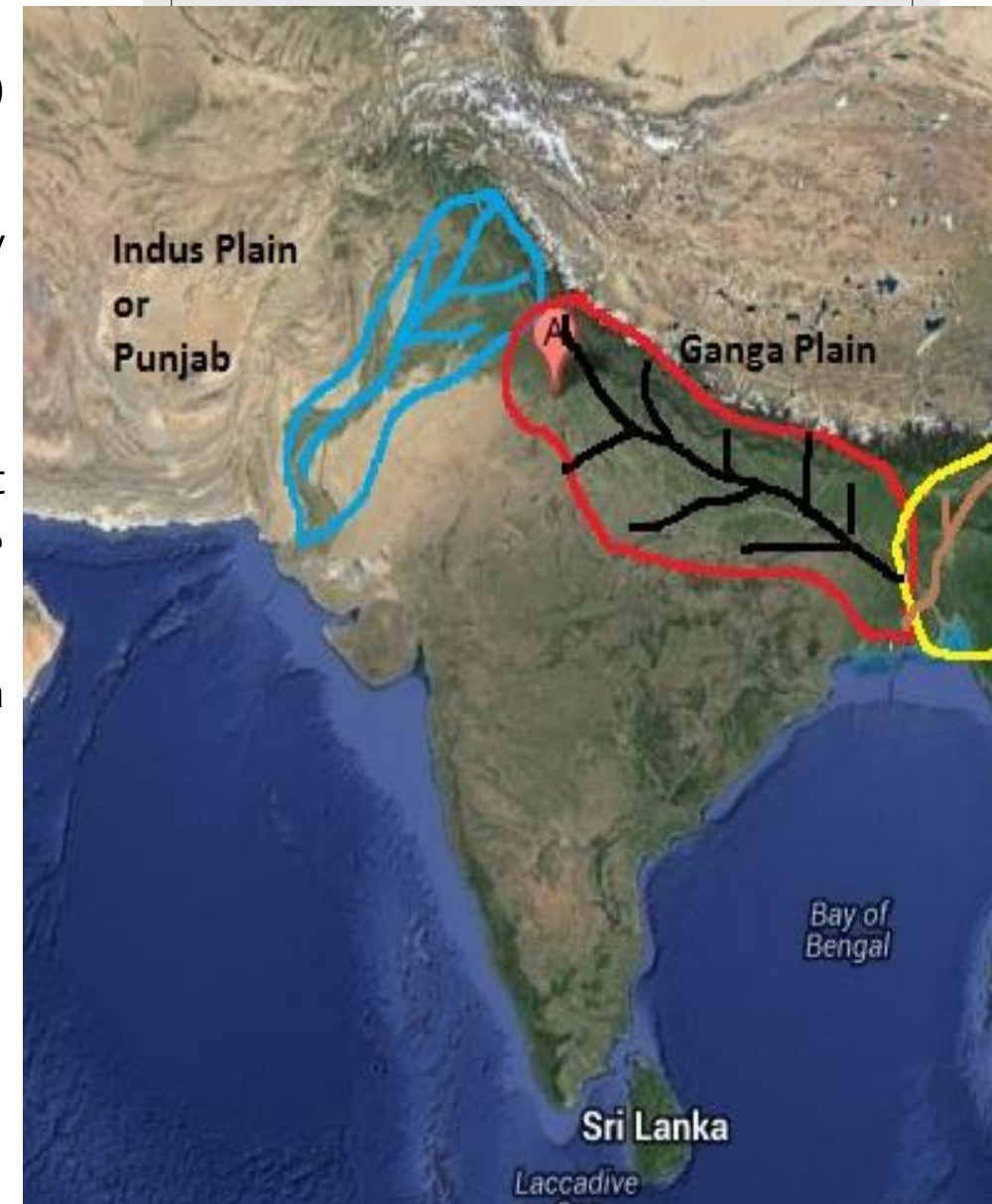


Northern Plains: Regional Divisions



Indo Gangetic Brahmaputra Plain: The Great Plain of North India

- **Location:** To the south of the Himalayas and north of the peninsular India
- **Boundaries:** It is covered by the foothills of the Shivalik in the North and the peninsular India in the South.
- **Formation:** Formed by the deposition work of 3 regional rivers - The Indus, The Ganga, The Brahmaputra
- **Maximum Depth of Soil:** 5000 metres
- **Origin:** The plains were originally a deep depression or furrow.
- According to Austrian geologist Edward Suess, it was a "fore deep"
- Sir Sydney Burrard said, it was a "deep rift valley or fracture"
- **Length:** 3200 kilometres
- **Width:** 150 - 3000 kilometres
- **Area:** 7-8 lakh sq km.
- It is the largest alluvial tract of the world
- Starts from the mouth of the Indus to the mouth of the Ganga

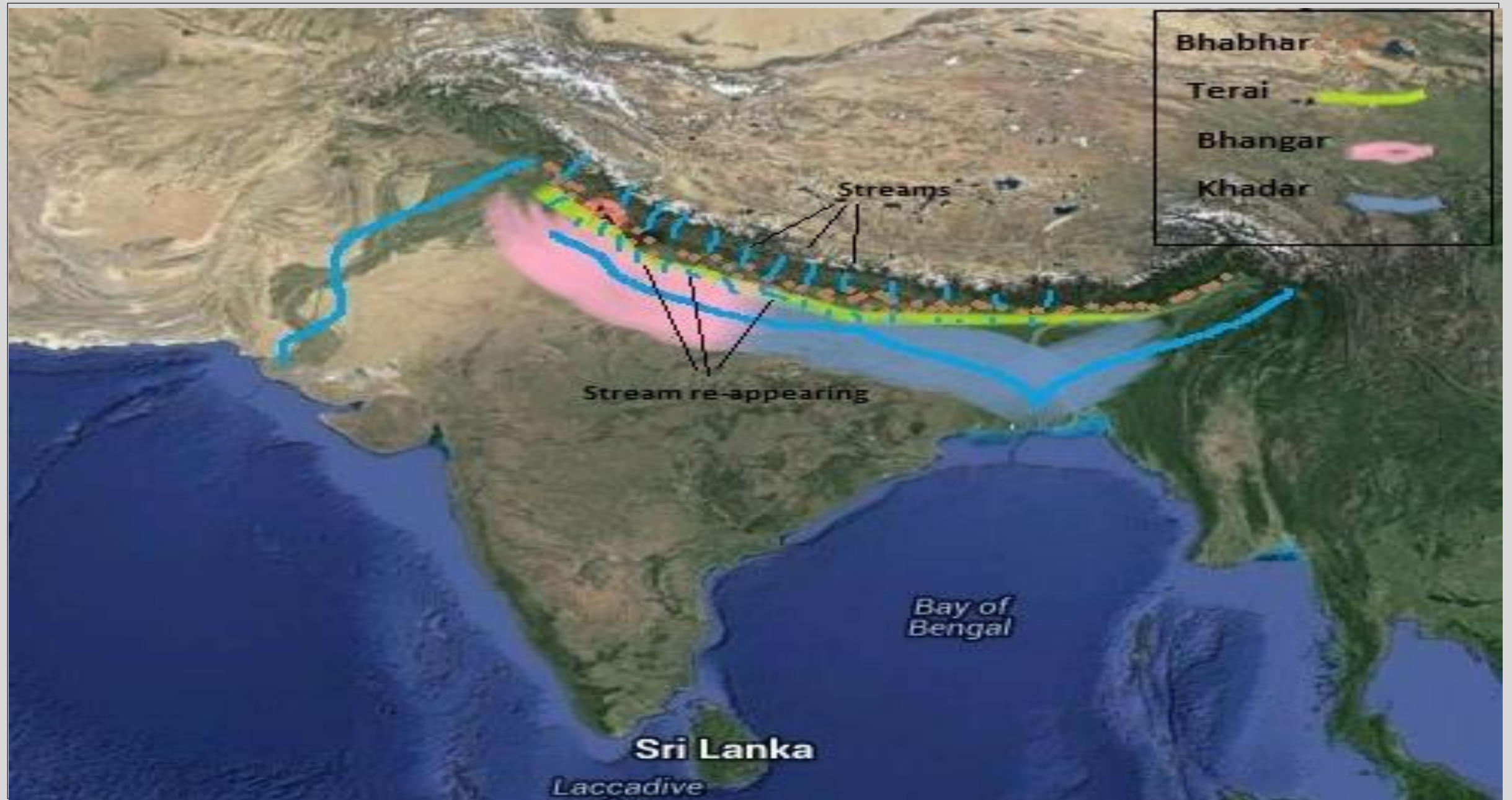


Geomorphology of the Plain

- **The Bhabar:** A narrow belt, about 8-16 km wide, running in east-west direction, along the foot of Shivalik, from the Indus to the Testa.
- It forms the alluvial fans.
- The porosity of the pebble studded rock bed is so high that most of the streams sink and flow underground.

The Terai: It is 15-30 km wide marshy tract in the south of Bhabar, running parallel to it.

- It is marked by the re-emergence of the underground streams of the Bhabar belt.
- Major characteristics include:
 - Re-emerged water
 - Ill-drained marshy land
 - Excessive dampness
 - Thick forest
 - Shelter for flora and fauna.
 - Agricultural land

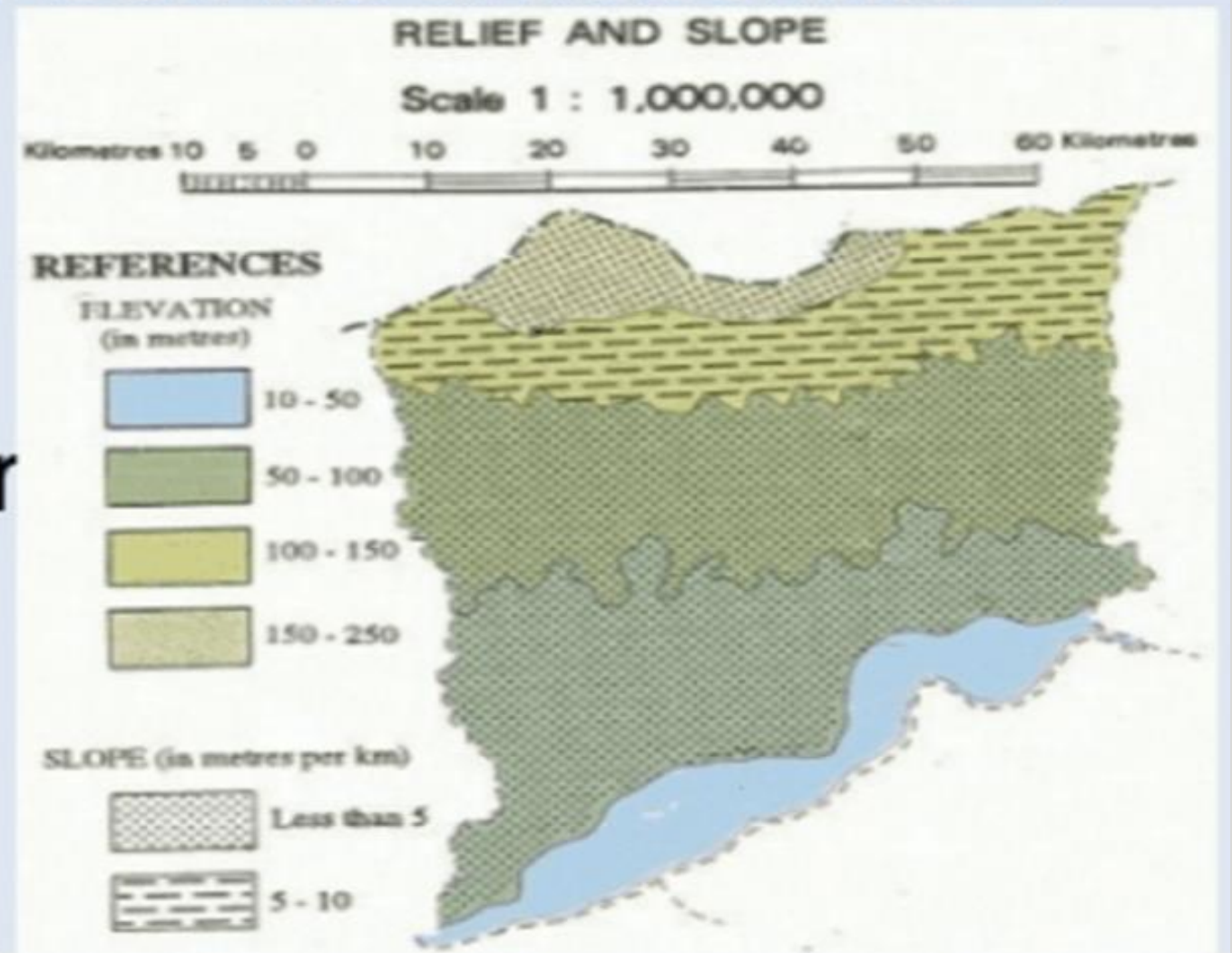


Eastern Himalaya Ecoregion Complex



According to the variations in relief features, the Northern Plains can be divided into 4 regions.

- 1) The Bhabar
- 2) The Terai
- 3) The Bhangar
- 4) The Khadar

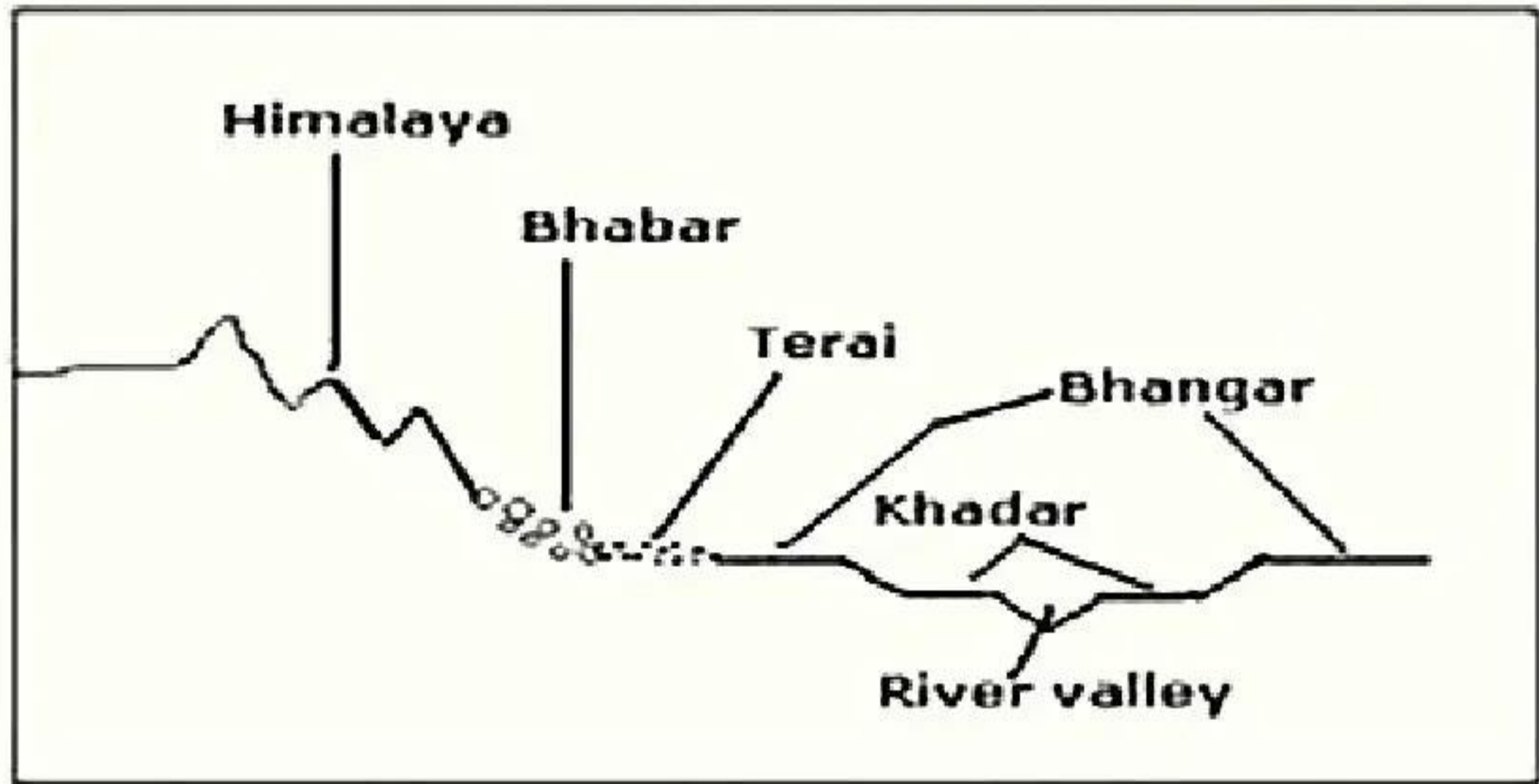


- **The Bhangar:** It is composed of old alluvium of Middle Pleistocene age and forms the alluvial terrace above the level of flood plains.
- It is often impregnated with calcareous concretions known as *kankar*.
- It has meandering tendencies.

- **The Khadar:** It is composed of newer alluvium and forms the flood plains along the river banks.
- It has less *kankar*, and the organic remains are found in this area.
- It forms a delta.

- **Reh or Kallar:** It is a barren saline dry area in Uttar Pradesh, Uttarakhand and Haryana.

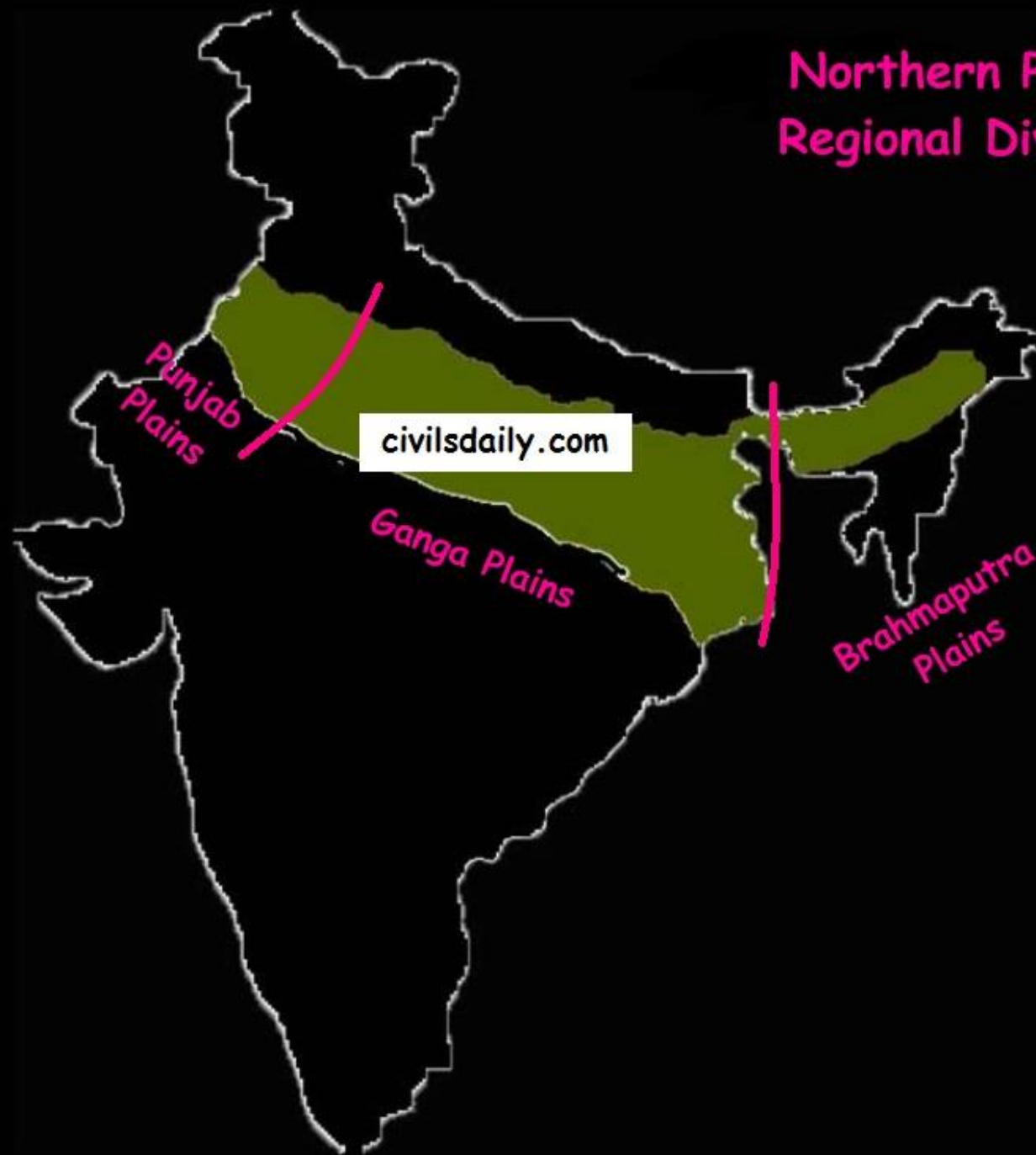
- **Bhur:** It is found along the banks of river Ganga, especially in the upper Ganga-Yamuna Doab.
- This has been formed due to accumulation of wind-blown sands during the dry hot months of the year



Regional Divisions of the Great Plain

- The Rajasthan Plain
- The Punjab-Haryana Plain
- The Ganga Plain
- The Brahmaputra Plain

Northern Plains: Regional Divisions

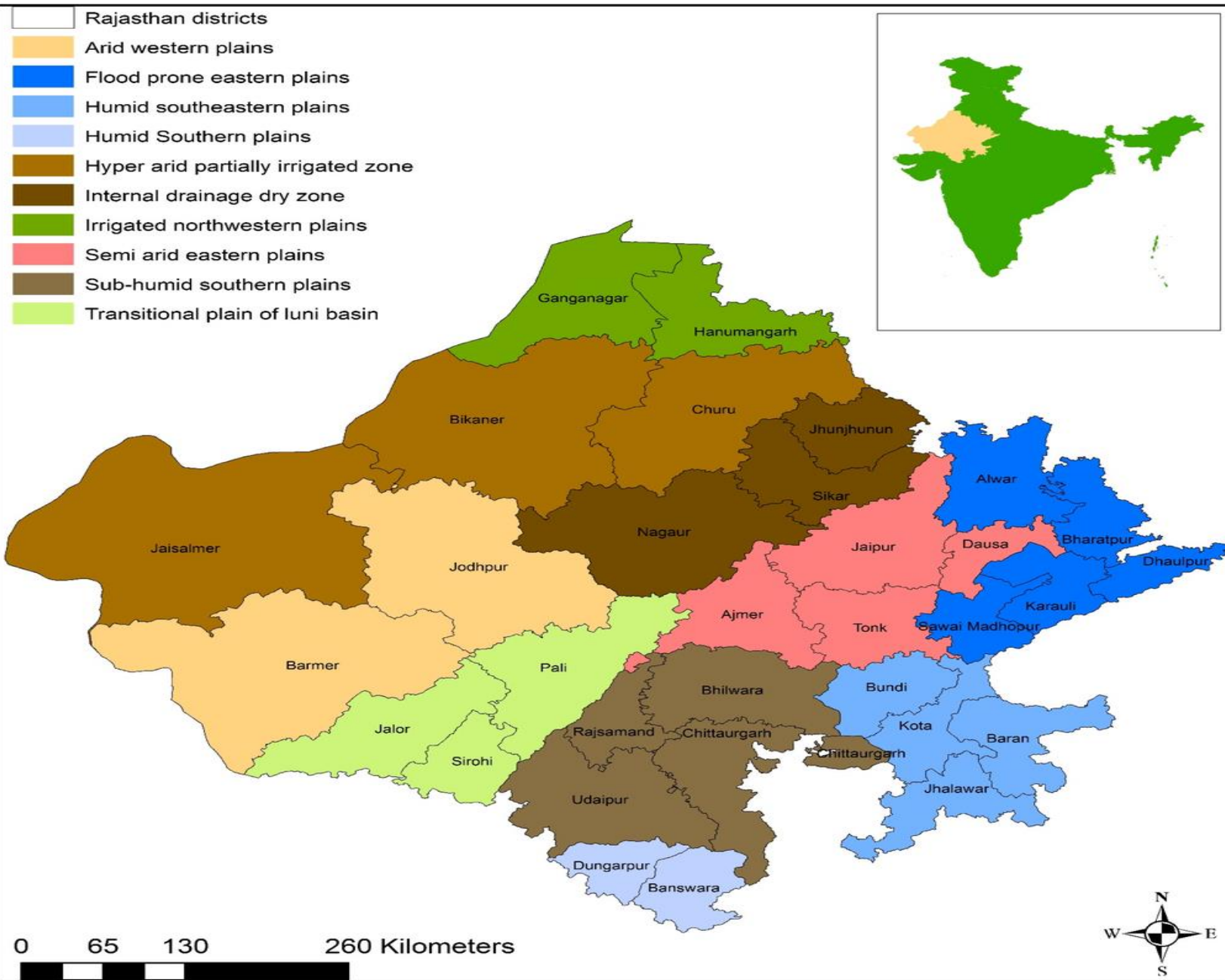


The Rajasthan Plain

- The western extremity of the Great Plain of India consists of the Thar or the Great Indian Desert, which covers the western Rajasthan and the adjoining parts of Pakistan.
- Length: 650 km
- Width: 250-300 km
- Area: 2 lakh sq km in India and Pakistan, out of which 1.75 lakh sq km falls within India.
- Elevation: 325 m
- Areas:
 - Rajasthan
 - West of Aravali Range
- Some parts of Haryana, Punjab and Gujarat
- Research Institute: Central Arid Zone Research Institute, Jodhpur
- This Plain is known by different names in different regions:
 - Near Indo-Pak Border is Rann of Kuchh
 - Desert proper is Marusthali – Marwar Plain
- Types of Rocks
 - Sand with a few outcrops of bedrock of gneisses, schists and granites
 - Shifting sand dunes are found in this area, locally known as *dhrian*

Physical Divisions of Rajasthan

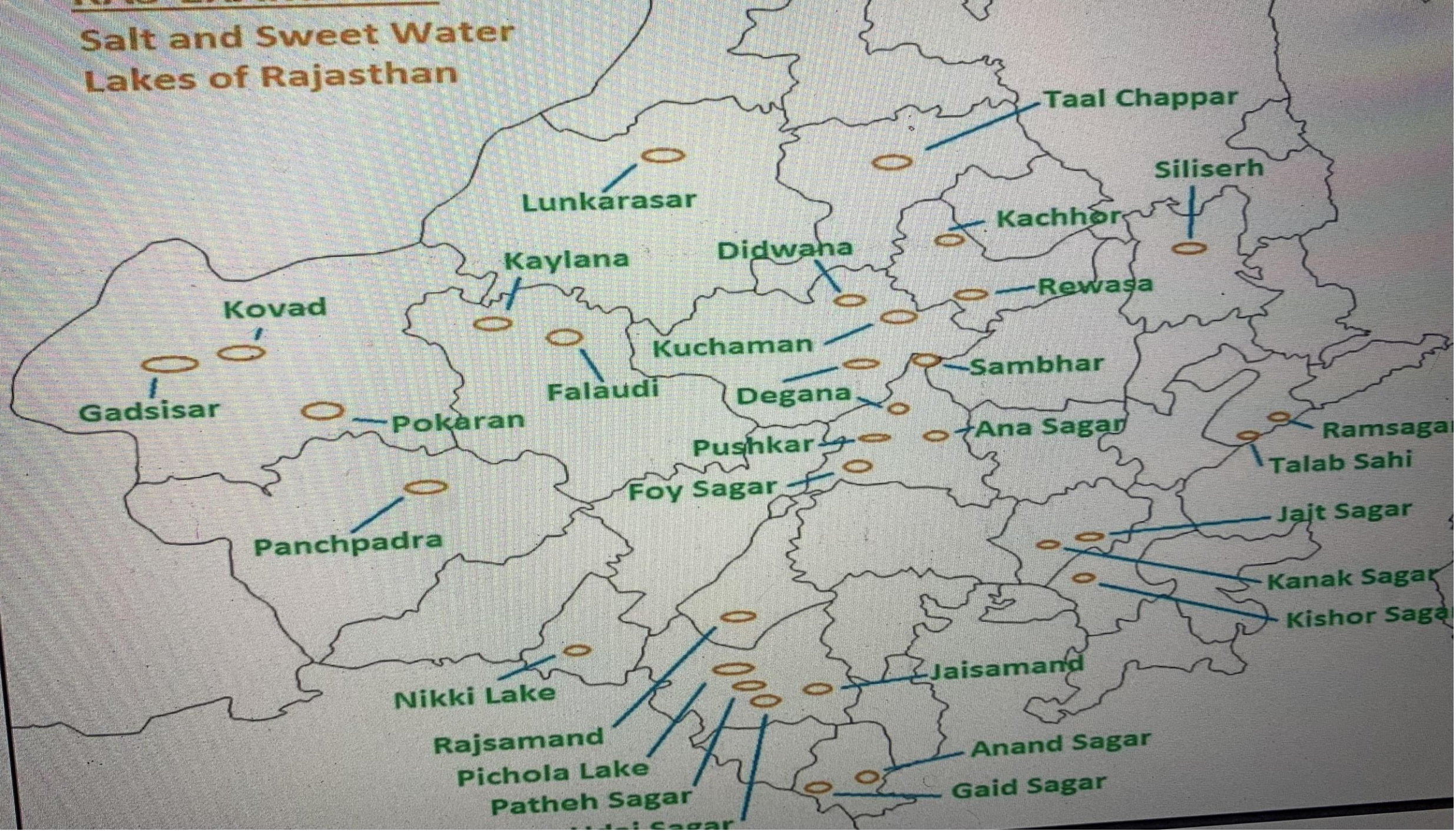




The Rajasthan Plain

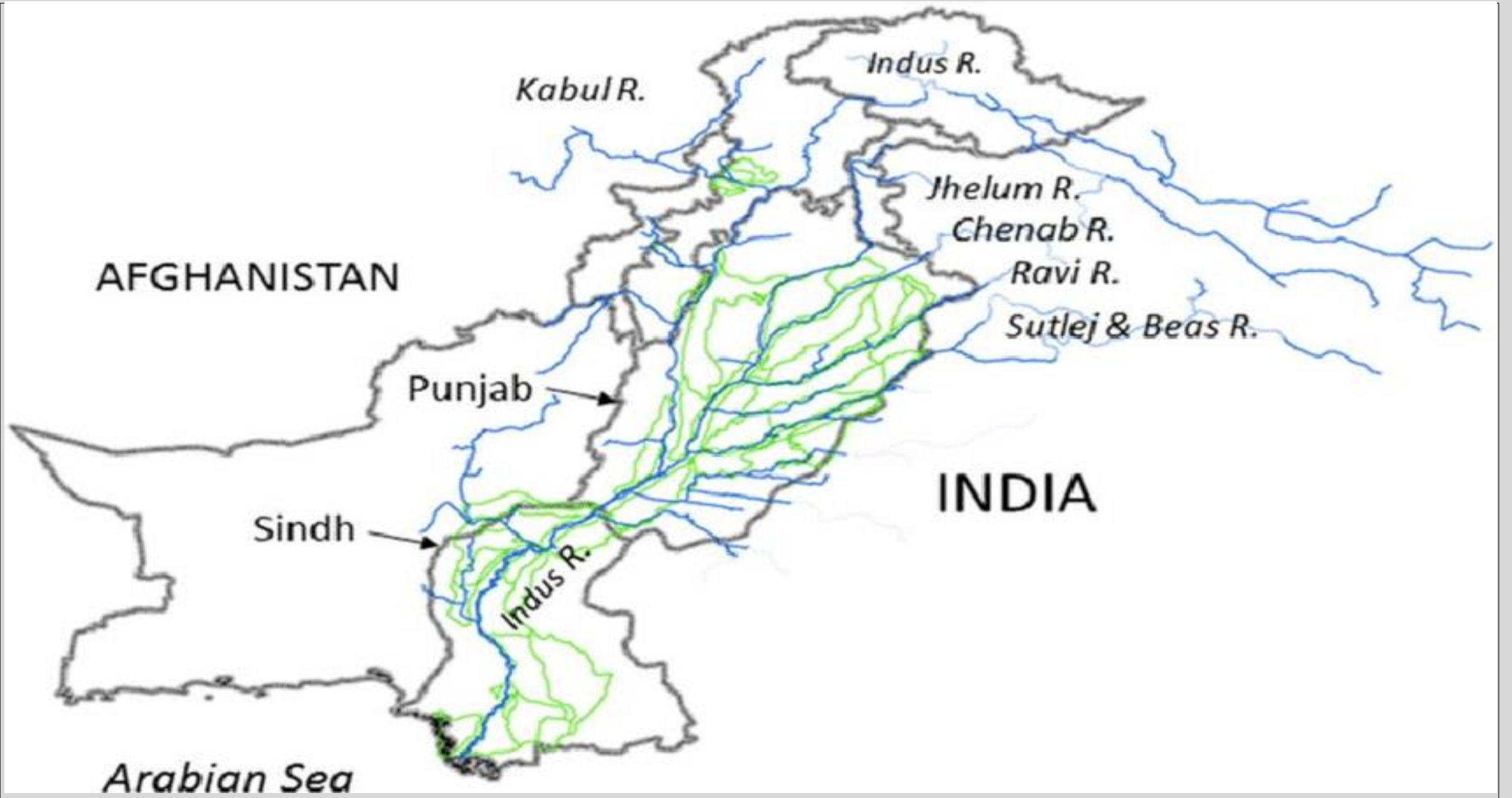
- The eastern part of the Thar Desert, upto the Aravali Range, is a semi-arid plain, which is known as the Rajasthan Bagar.
- Drained by short seasonal streams.
- The fertile tract is called *rohi*.
- Important river is *Luni*, and the tract north of Luni is known as *thali* or sandy plain.
- North of the Luni basin is a large area of inland drainage on the eastern edge of the Thar Desert having several saline lanes.
- Important lakes:
 - The Sambhar
 - The Didwana
 - The Degana
 - The Kuchaman
 - The Sargol
 - Tha Khatu
- The largest lane is the Sambhar lake, about 65 km west of Jaipur. Situated at an altitude of about 360m in the Aravali terrain, this lake is 30 km long with an average width of 3-8 km. It occupies an area of about 225 sq km during the rainy season but shrinks considerably in dry season.

Salt and Sweet Water Lakes of Rajasthan







The Punjab-Haryana Plain

- The Great Indian Desert gives way to the fertile plains of Punjab and Haryana towards the east and north east.
- Length: 640km
- Width: 300 km
- Area: 1.75 lakh sq km
- Boundaries: The eastern boundary is formed by the Yamuna river
- Elevation: 250 m
- Important rivers (the land of 5 rivers - Punjab):
 - The Satluj
 - The Beas
 - The Ravi
 - The Chenab
 - The Jhelum
- It is primarily made up of *doabs* -- the land between two rivers. From east to west, these doabs are:
 - Bist-Jalandhar Doab, lying between the Beas and the Sutluj
 - Bari Doab, between the Beas and the Ravi
 - Rechna Doab, between the Ravi and the Chenab
 - Chaj Doab, between the Chenab and the Jhelum
 - Sind Sagar Doab, between the Jhelum-Chenab and the Indus
- Important terms
 - Flood plains: Khadar, bluff, dhaya
 - Numerous streams: Chos

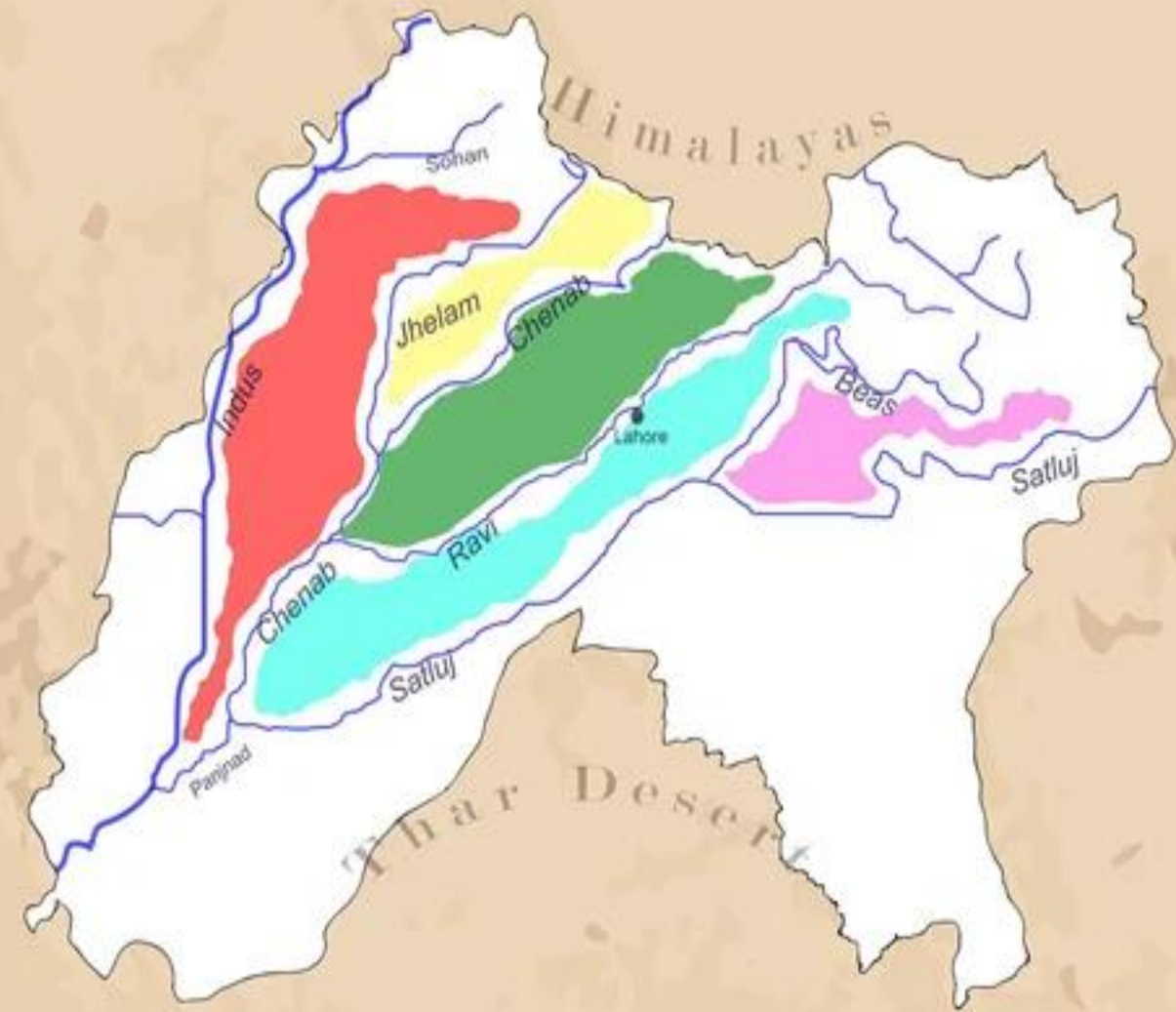


The Doabs of Punjab

Legend

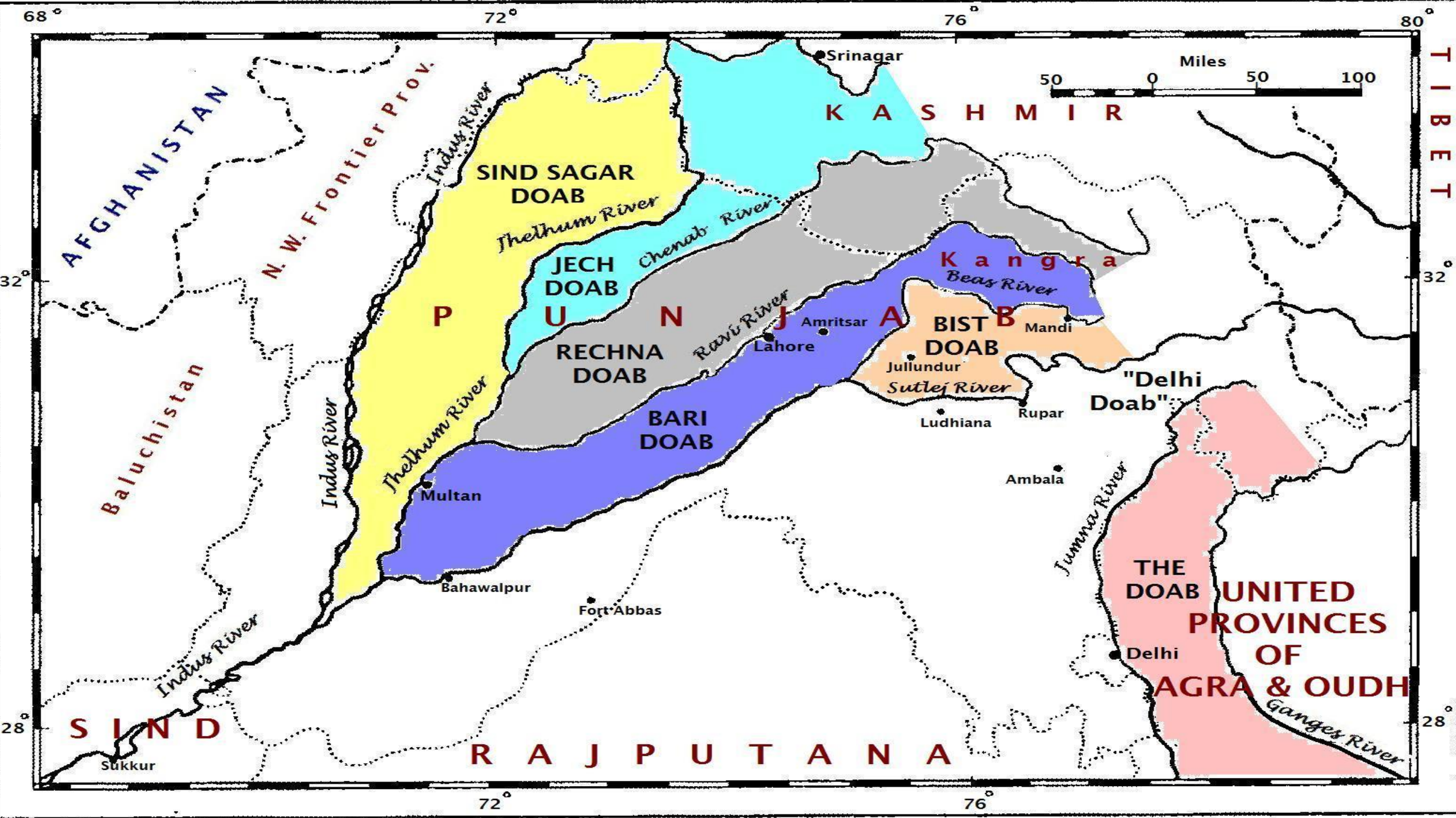
-  Sindh Sagar Doab
-  Jech Doab
-  Rechna Doab
-  Bari Doab
-  Bist Doab
-  River

150 Km



The word DOAB is Persian word where 'Do' means two and 'Ab' means water. The term is used in India and Pakistan for the "tongue," or tract of land lying between two converging, or confluent, rivers. Therefore, a doab is the land between two rivers. Each of the tracts of land lying between the confluent rivers of the Punjab region of Pakistan and India has a distinct name, said to have been coined by Mughal emperor Akbar. The names (except for 'Sindh Sagar') are a combination of the first letters, in the Persian alphabet, of the names of the rivers that bound the Doab. For example, Jech = 'Je'(Jhelum) + 'Ch'(Chenab)

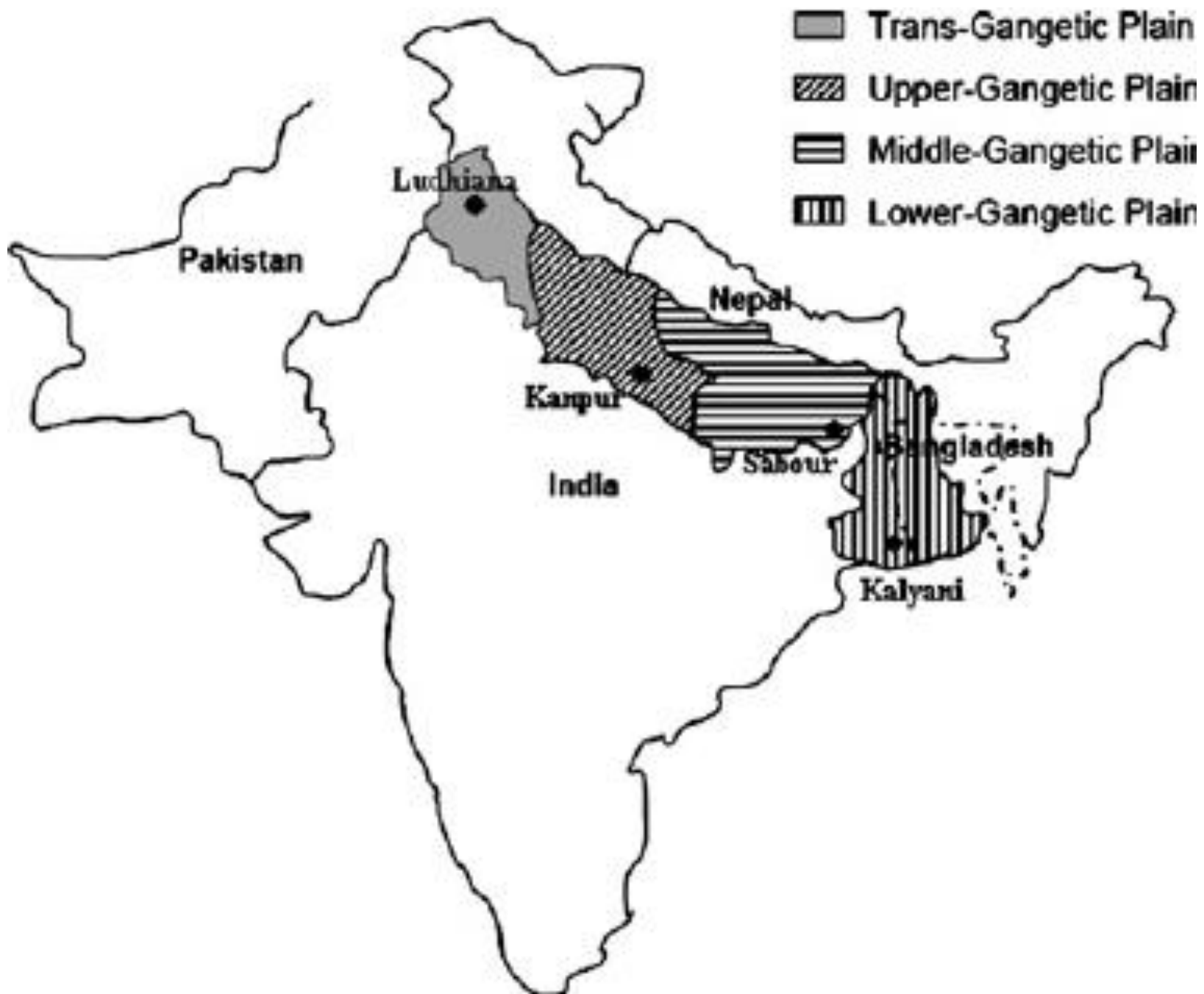




The Ganga Plain

- This is the largest unit of the Great Plains of India stretching from Delhi to Calcutta in the states of Uttar Pradesh, Uttarakhand, Bihar and West Bengal covering an area of about 3.75,00,000 square kilometers
- The major northern rivers of the Ganga Plain:
 - The Ganga
 - The Yamuna
 - The Brahmaputra
 - The Ghaghra
 - The Gandak
 - The Kosi etc.
- Major southern rivers of Ganga Plain
- The peninsular rivers such as Chambal, Betwa, Ken, Son etc. joining the Ganga River system have also contributed to the formation of this plain.





The Ganga Plain can further be subdivided into the following 3 divisions:

- The upper Ganga plain
- The middle Ganga plain
- The lower Ganga plain

The Upper Ganga Plain

- It comprises the upper parts of the Ganga plain.
- This plain is delimited by the 300 metre contour in the Shivaliks in the North, the peninsular boundary in the South and the course of Yamuna River in the West .
- This plain is about 550 kilometre long in the East West direction, and nearly 380 kilometres wide in North South direction, covering an approximate area of 1.49 lakh per kilometres.
- Elevation varies from 100 to 300 metres above mean sea level.
- The plain is drained by Ganga and its tributaries like Yamuna, Ramganga, Sharda, Gomti, Ghagra river.
- Almost all rivers flow NW-SE course.
- The average gradient of land is about 25 centimetres per kilometre.
- The monotony of this plain and featureless plain is broken by Tarai Bhabar belt, river bluff, river meanders, Oxbow Lakes, levees, Sandy stretch (bhurs) and river channel.

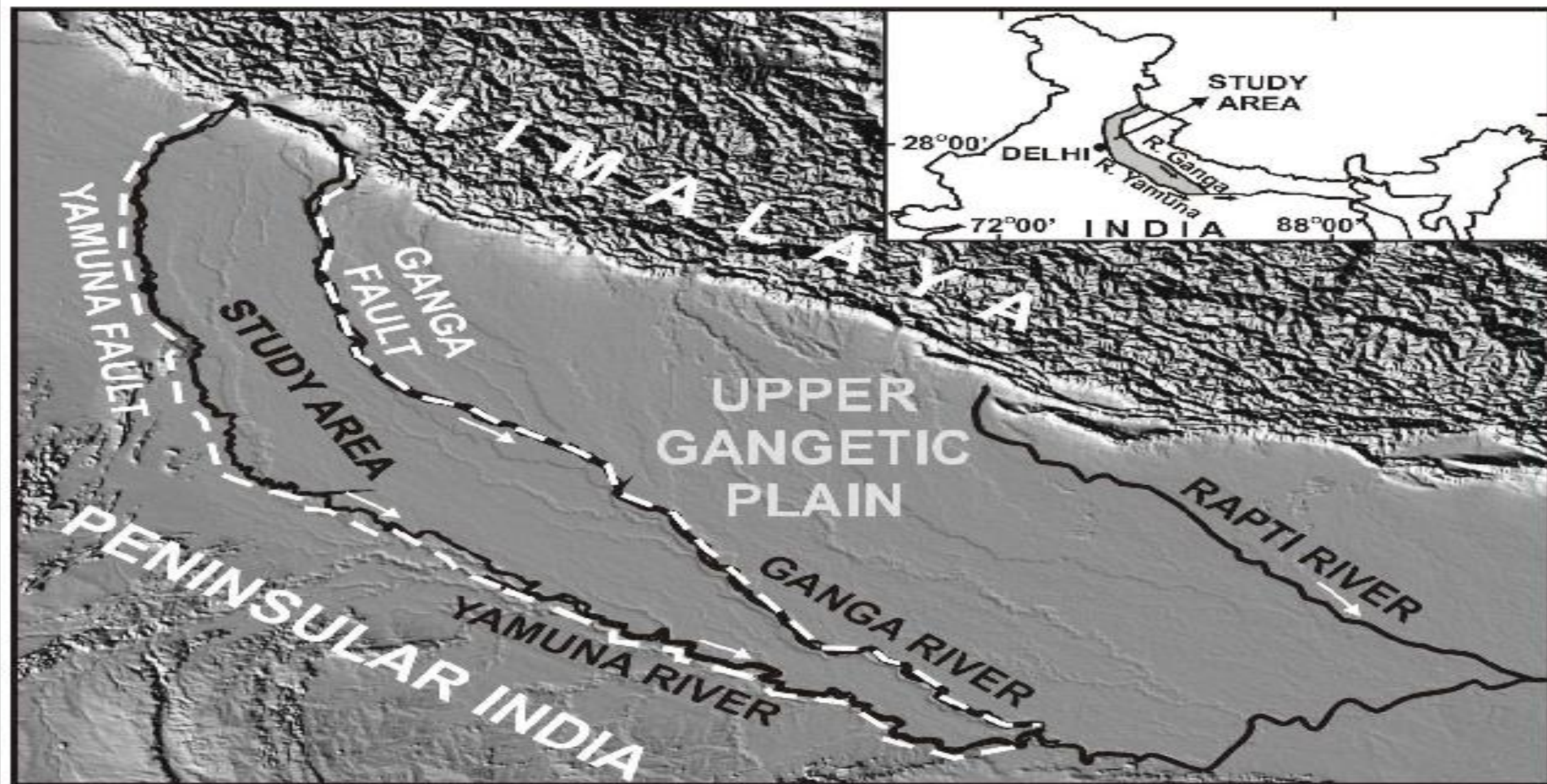
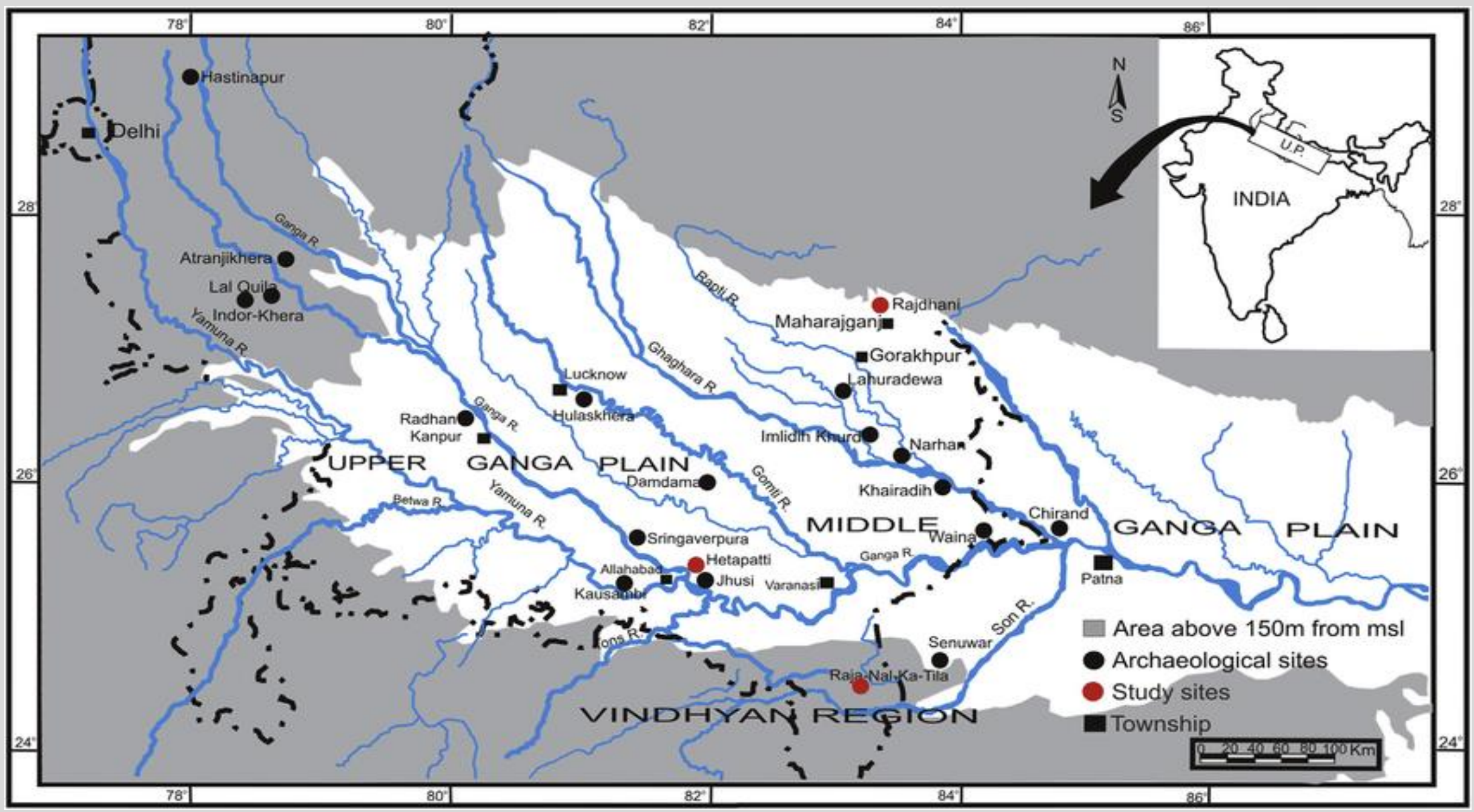


Figure 1. Study area map.

The Middle Ganga Plain

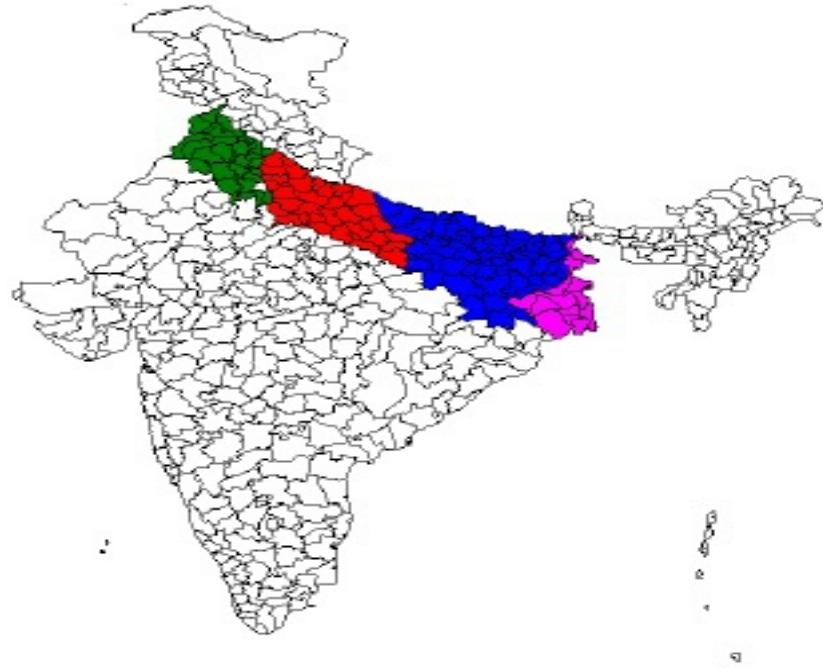
- To the East of upper Ganga plain in the middle Ganga plain, occupying eastern parts of Uttar Pradesh and northern parts of Bihar.
- It measures about 600 kilometres in East West and 330 km in North South direction.
- Total area 1.44 lakh square kilometre.
- Its northern and southern boundaries are well defined by the Himalayan foothills and the peninsular edge respectively.
- This plain is drained by the Ghagra, the Gandak and the Kosi rivers.
- These rivers are responsible for filling up with alluvial deposits of 2000 metres deep trough at the foot of Nepal Himalayas.
- This area is marked by levees, bluffs, oxbow lakes, marshes, tals, ravines, etc.
- The Kosi river of this area is known as the 'Sorrow of Bihar'
- The major units of this plain are Ganga-Ghaghara doab, Ghaghara-Gandak doab and the Gandak-Kosi doab (Mithila Plain)



The Lower Ganga Plain

- This plain includes the Kishanganj tehsil of Purania district in Bihar, the whole of West Bengal and most parts of Bangladesh.
- It measures about 580 kilometres from foot of the Darjeeling Himalayas in the North to the Bay of Bengal in the South and nearly 200 kilometres from Chhotanagpur Highland in the West to the Bangladesh border in the East.
- Total area of this plain is 81,000 square kilometres.
- It is 16 kilometer wide between Raj Mahal Hills and Bangladesh border
- The northern part of plain has been formed by the sediment deposits by Tista, Jaladhaka and Torsa.
- This area is marked by duars (Darjeeling tarai) and Barind plain.
- The seaward face the delta is studded with a large number of estuaries, mud flats, mangrove swamps, sandbanks, islands, forelands.
- Large part of coastal areas is covered by thick tidal forest. These are called the Sundarbans because of predominance of Sundari trees.

Indo-gangetic plain in India

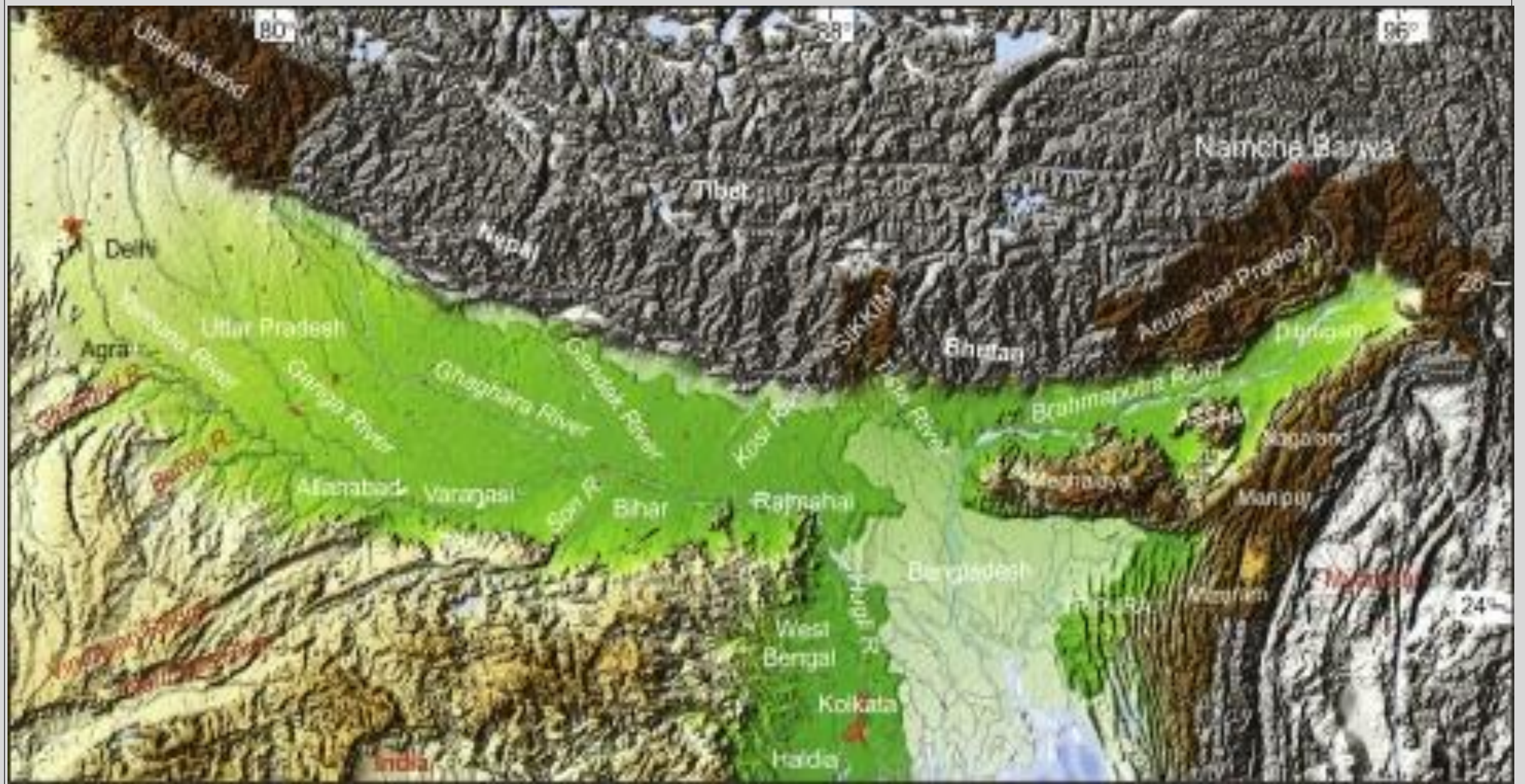


- Trans Gangetic**
- Upper Gangetic**
- Middle Gangetic**
- Lower Gangetic**



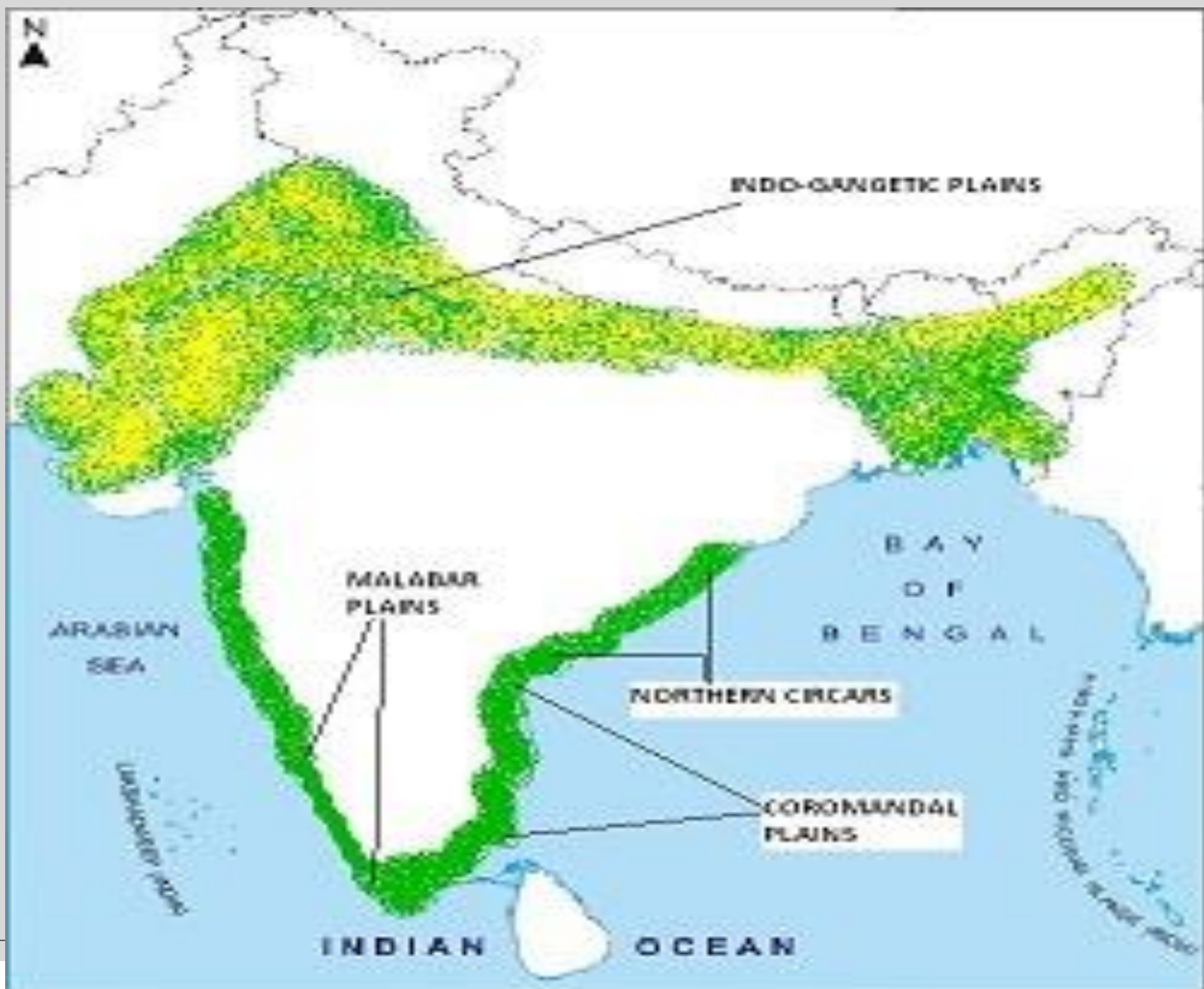
The Brahmaputra Plain

- The Brahmaputra Plain is situated in Assam.
- It is a well-demarcated physical unit girdled by the Eastern Himalaya of Himachal Pradesh in the north, Patkai and Naga Hills in the East and Garo-Khasi-Jayantia and Mikir Hills in the South. Its western boundary is formed by the Indo-Bangladesh border.
- This plain is 720 km long.
- Average width is 60-100 km long.
- Area is 56000 sq km.
- Average gradient is 12 cm per km



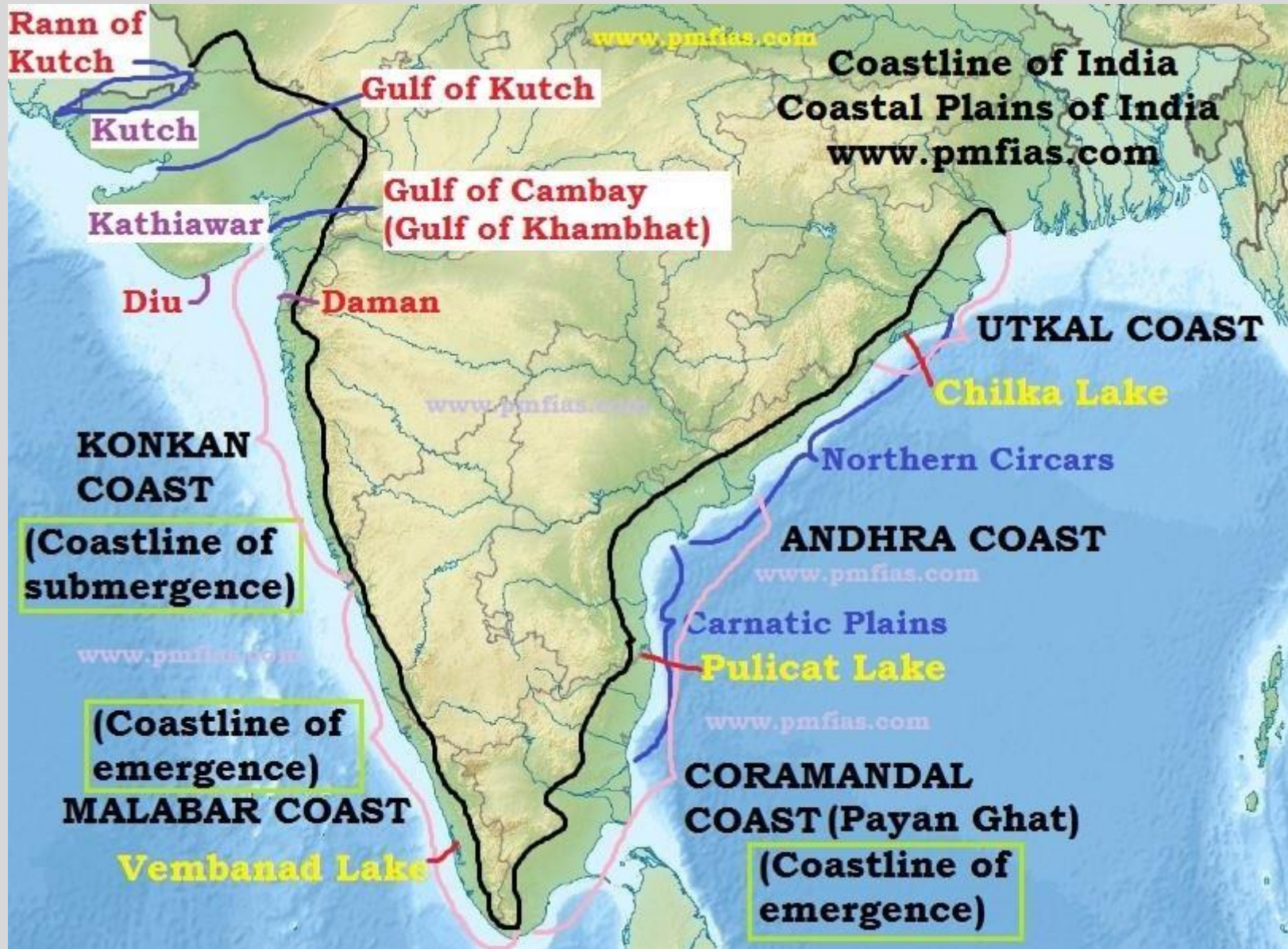
The Coastal Plains

- The narrow coastal strip between the edge of the peninsular plateau and the coastline of India, running for a distance of about 6000 kilometres from Rann of Kutch in the West to the Ganga-Brahmaputra delta in the East is called the coastal plains.
- The area between the Western Ghat and the Arabian Sea coast is known as the West Coastal Plain, and the area between the Eastern Ghat and the coast of the Bay of Bengal is called the East Coastal Plain.
- The two coastal plains meet each other at the southern tip of Kanyakumari.



The West Coastal Plain

- Stretching from the Rann of Kutch in the North to Kanyakumari in the South.
- The Kutch Peninsula was an island surrounded by sea and lagoons. These seas and lagoons were later filled by sediment brought by the Indus River which used to flow through this area.
- The true West coastal plain lies between Surat and Kanyakumari for a distance of 1600 kilometres
- Due to scarcity of rain and flowing surface water, the work of wind is felt every where and this has given rise to arid and semi-arid landscape, coastal sand dunes, sandy plains.
- Along the north of Kutch, there lies a broad level salt soaked plain - Great Rann.
- It is 320 km long, 160 km wide and covers 21500 sq km.
- Important rivers:
 - Banas
 - Luni



Coastal Plains: Subdivisions

Kachchh and
Kathiawar coast

Konkan coast

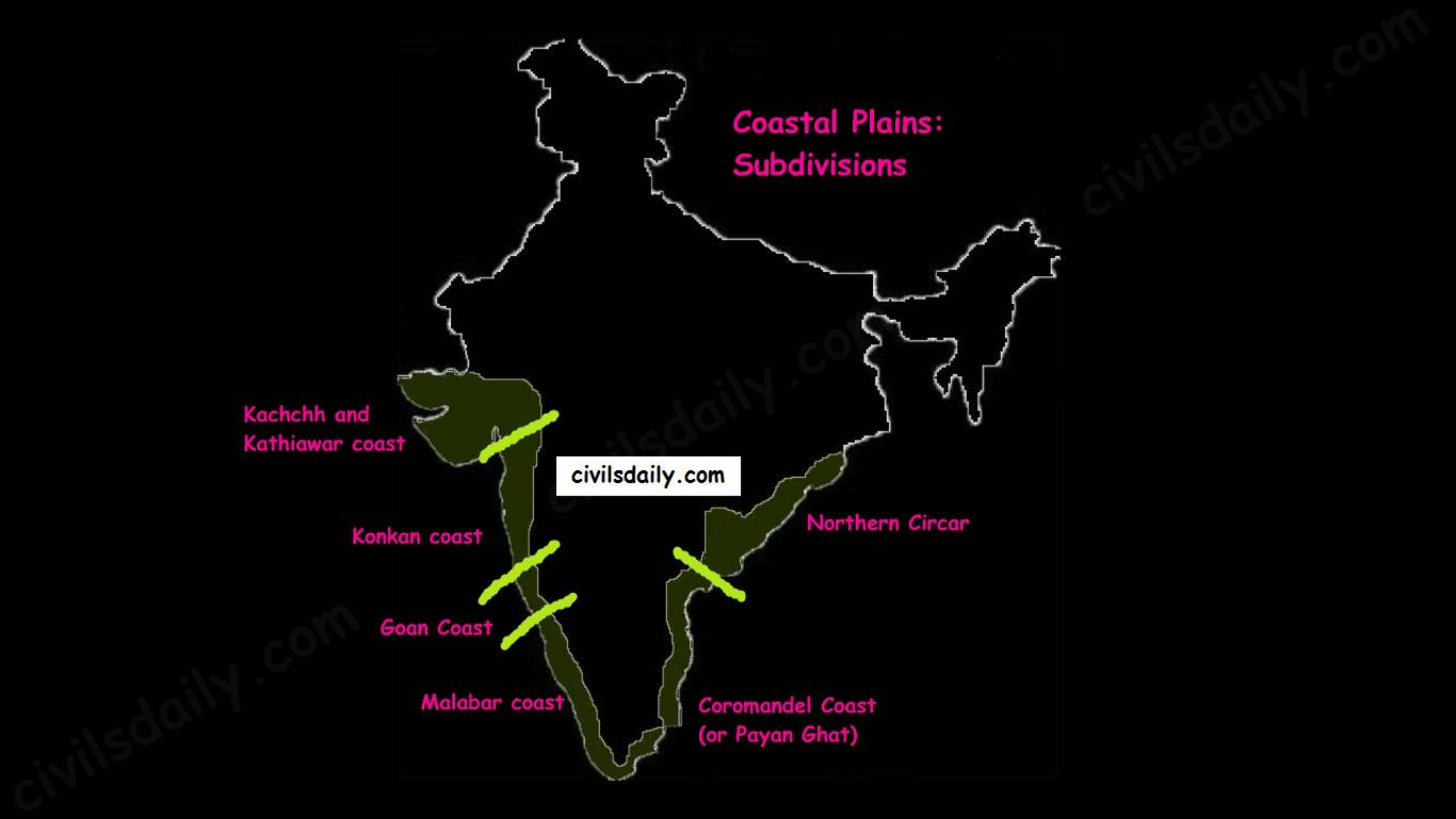
Goan Coast

Malabar coast

Coromandel Coast
(or Payan Ghat)

Northern Circar

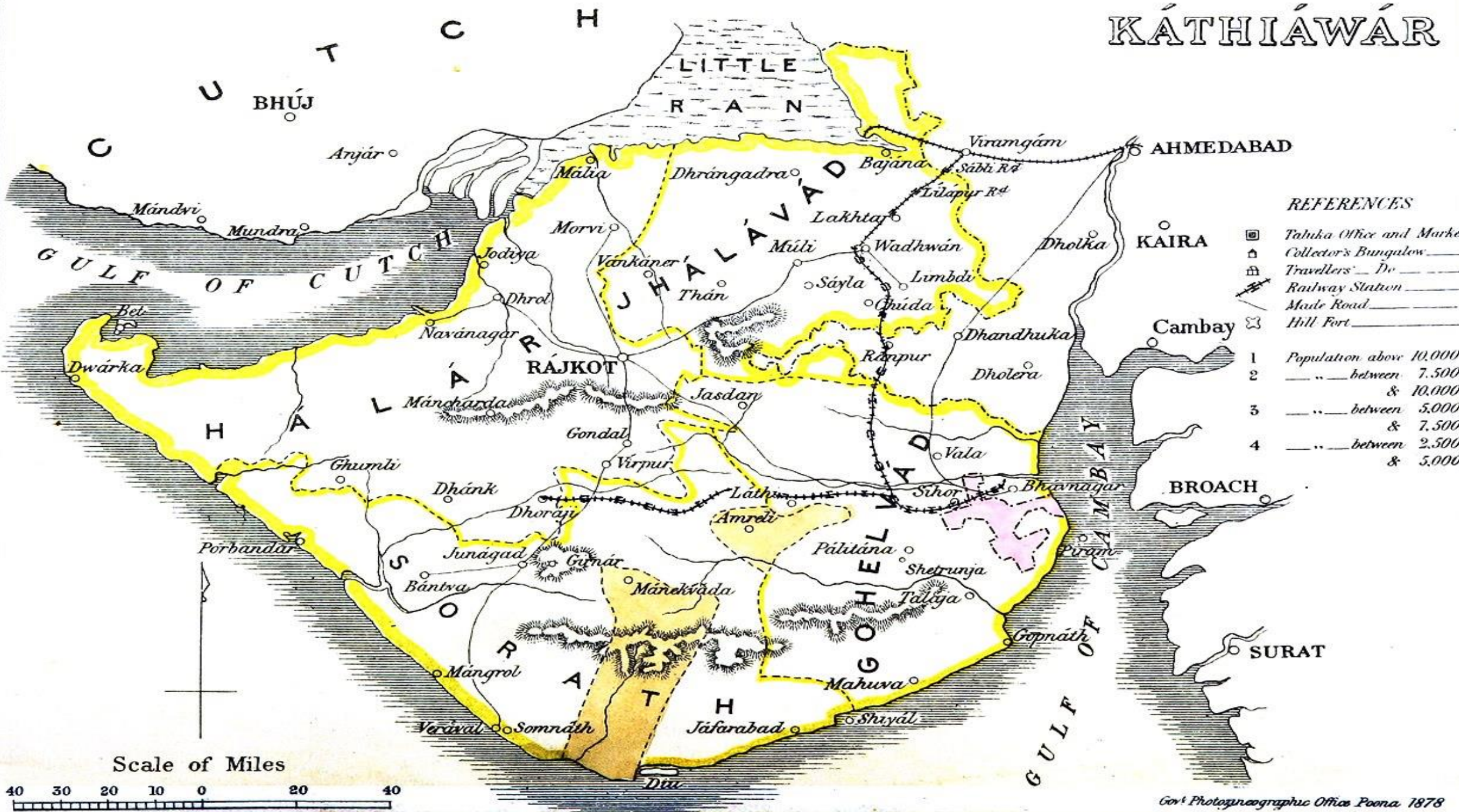
civildaily.com



Kathiawar Peninsula

- It lies to the south of Kutchh.
- It is encircled on the east and north-east by the Little Rann and Nal Basin.
- Elevation is less than 200 metres.
- Highlands of this region are:
 - Mahadev Hills
 - Mount Girnar (1117 m high)
- Gir Range is located in the southern parts of Kathiawar Peninsula. It is covered with dense forests and is famous as the home of the Gir Lion.

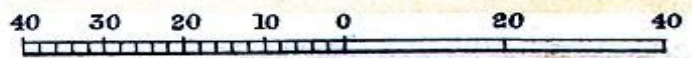
KĀTHIĀWĀR

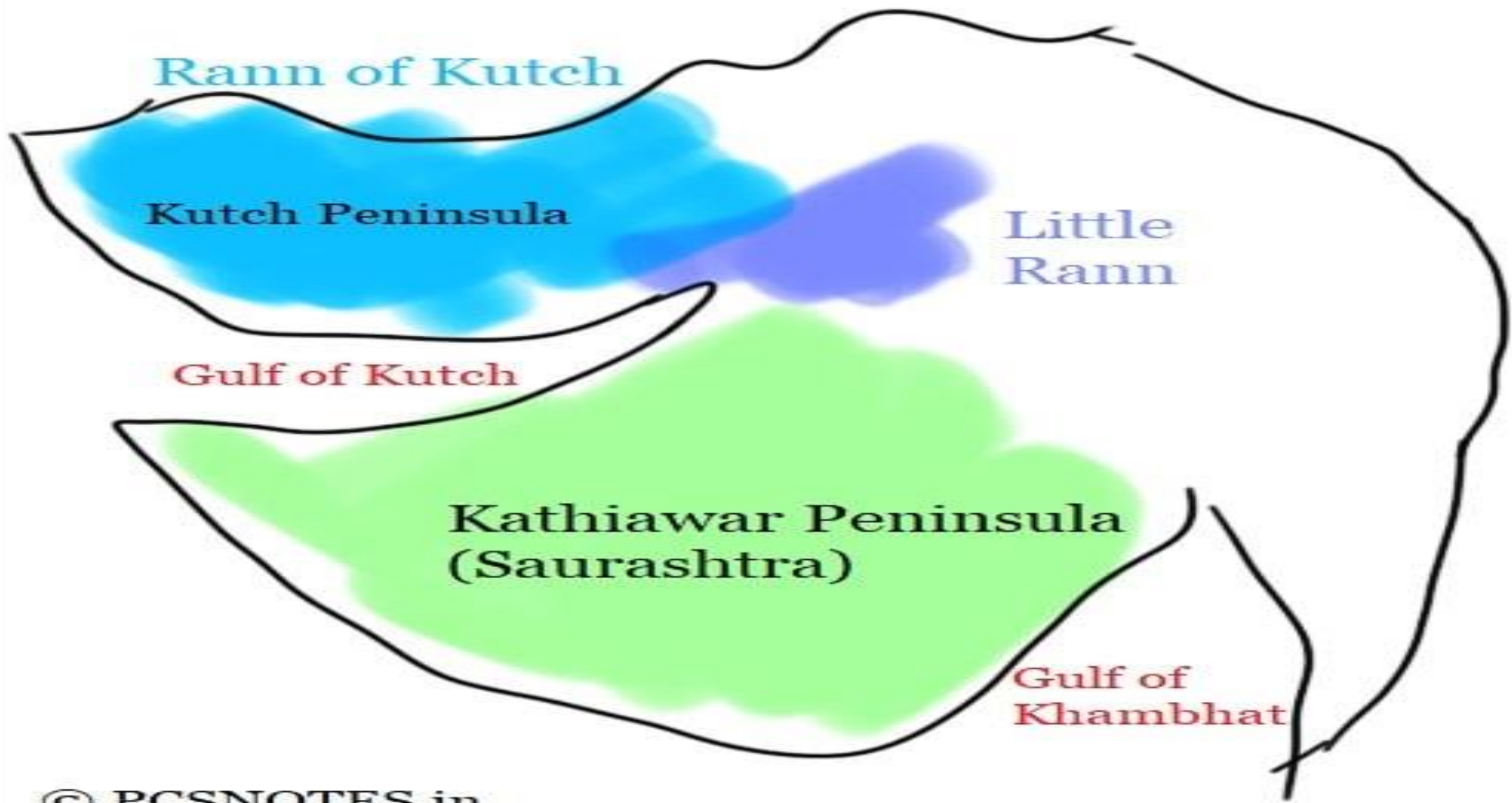


REFERENCES

- ▣ *Tahuka Office and Market*
 - ◡ *Collector's Bungulow*
 - ⌘ *Travellers' Do*
 - ⚡ *Railway Station*
 - — — *Made Road*
 - ⊠ *Hill Fort*
-
- 1 *Population above 10,000*
 - 2 *— " — between 7,500 & 10,000*
 - 3 *— " — between 5,000 & 7,500*
 - 4 *— " — between 2,500 & 5,000*

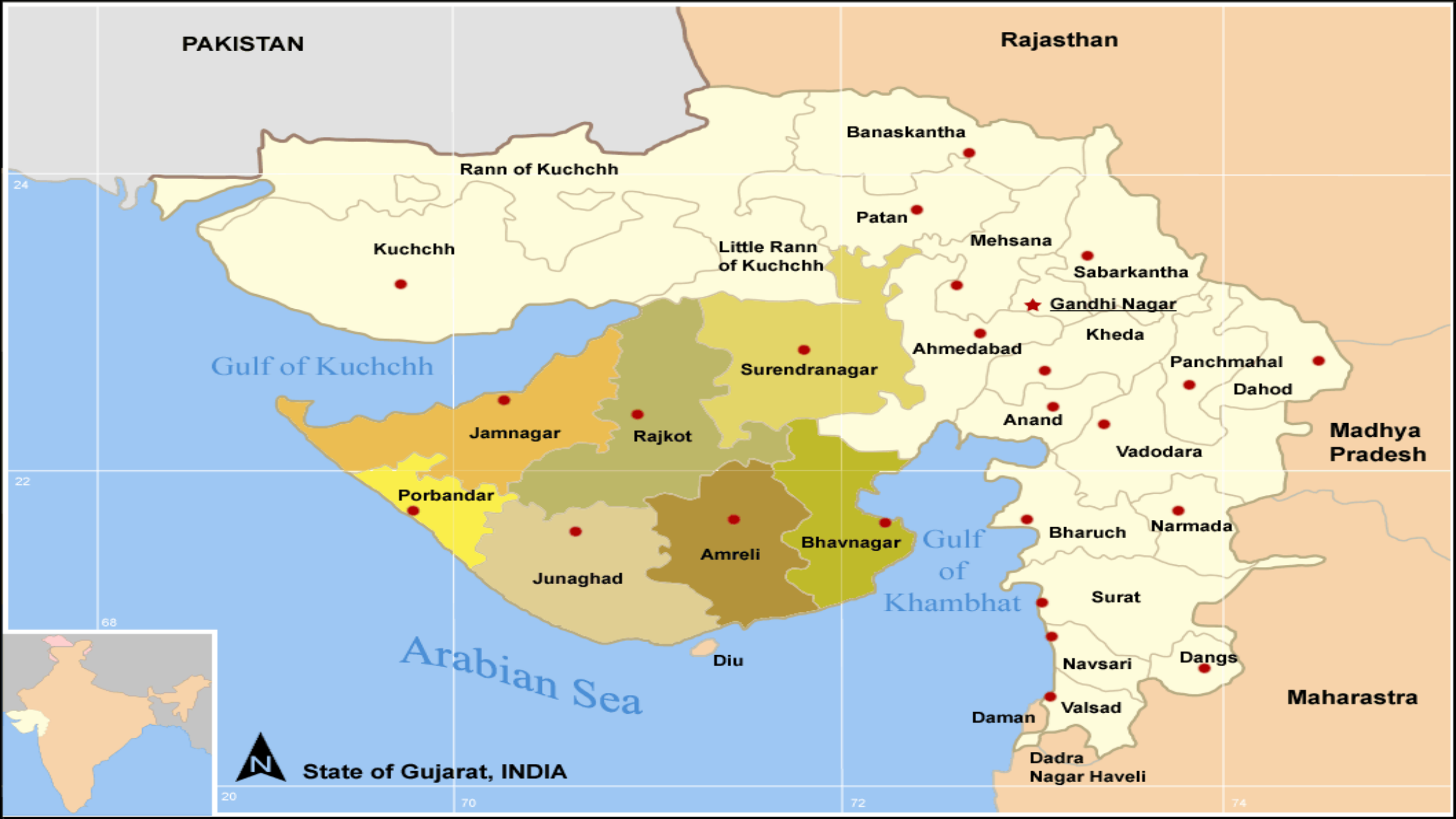
Scale of Miles





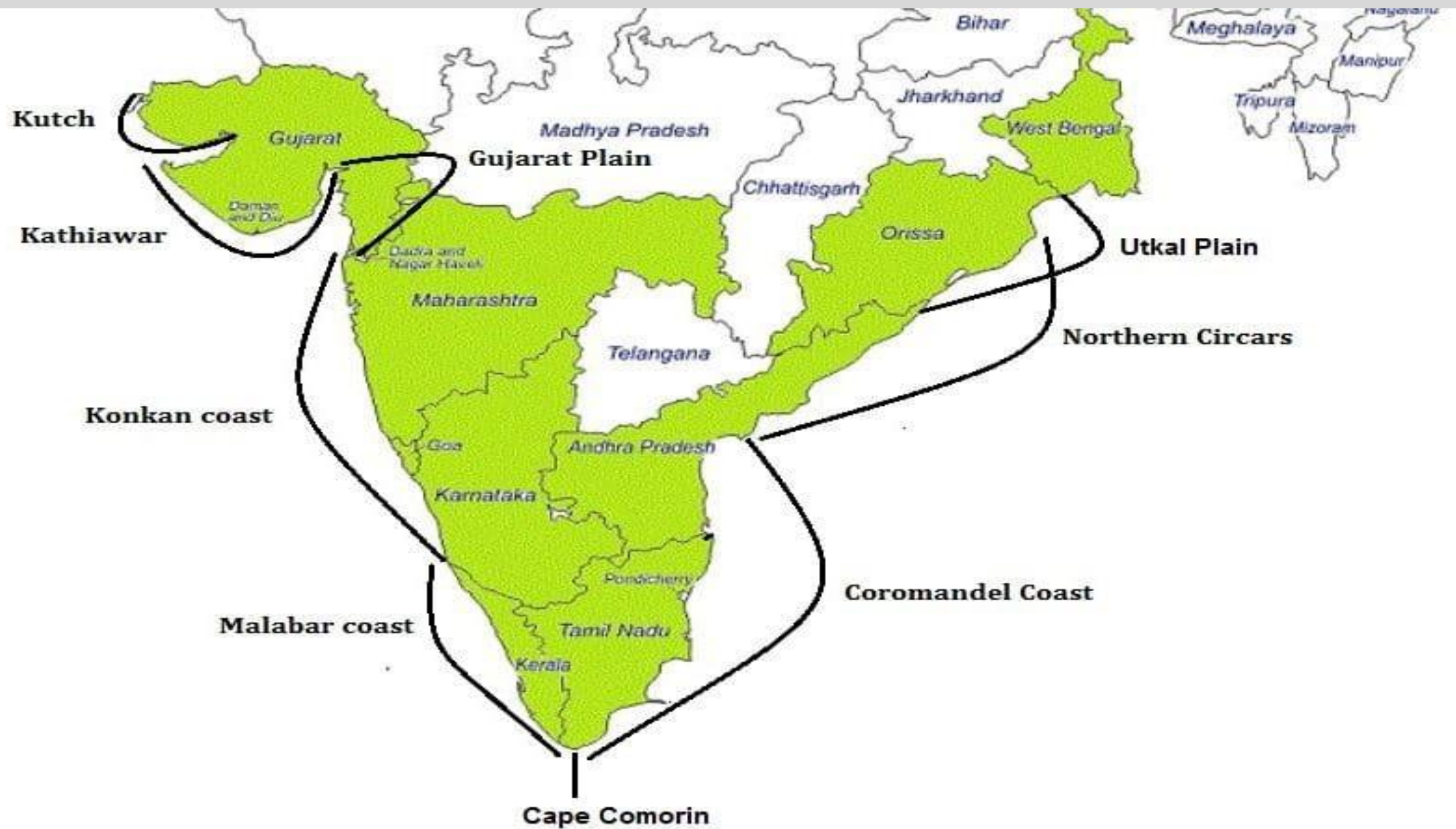
The Gujarat Peninsula

- The Gujarat plain lies East of Kutch and Kathiawar slopes towards the West and South West.
- Important rivers:
 - Narmada
 - Tapi
 - Mahi
 - Sabarmati
- These rivers flow into the Gulf of Khambhat.
- A chain of saline marshes near the coast is prone to floods during high tide.



The Konkan Plain

- Located in the south of Gujarat Plain.
- Extends from Daman to Goa for a distance of about 500 kilometres.
- Width varies from 50 to 80 km.
- It has some features of marine erosion, including cliff, shoals, reefs and islands in the Arabian Sea (Mumbai).
- Important rivers:
 - Vaitarni
 - Ulhas
 - Amba
- Some lateritic hillocks rise to 100 m above sea level.



India River Map

Map Showing all Major Rivers of India



The Karnataka Coastal Plains

- It extends from Goa to Mangalore.
- It is 225 km long.
- Width is 30-50 km.
- There are numerous spurs near Goa and Coondapoor.
- The Saraswati river makes an impressive waterfall known as Gersoppa (Jog) Fall, which 271 m high.



The Kerala Plain

- It is also known as the Malabar Plain..
- It is located between Mangalore and Kanyakumari.
- It is about 500 kilometre long and 96 kilometre wide.
- The existence of lakes, lagoons, backwaters (kayals), spits, etc is a significant characteristic of Kerala coast.
- The largest backwater lake is the Vembanad Lake, which is about 75 kilometre long and 500 kilometres wide.



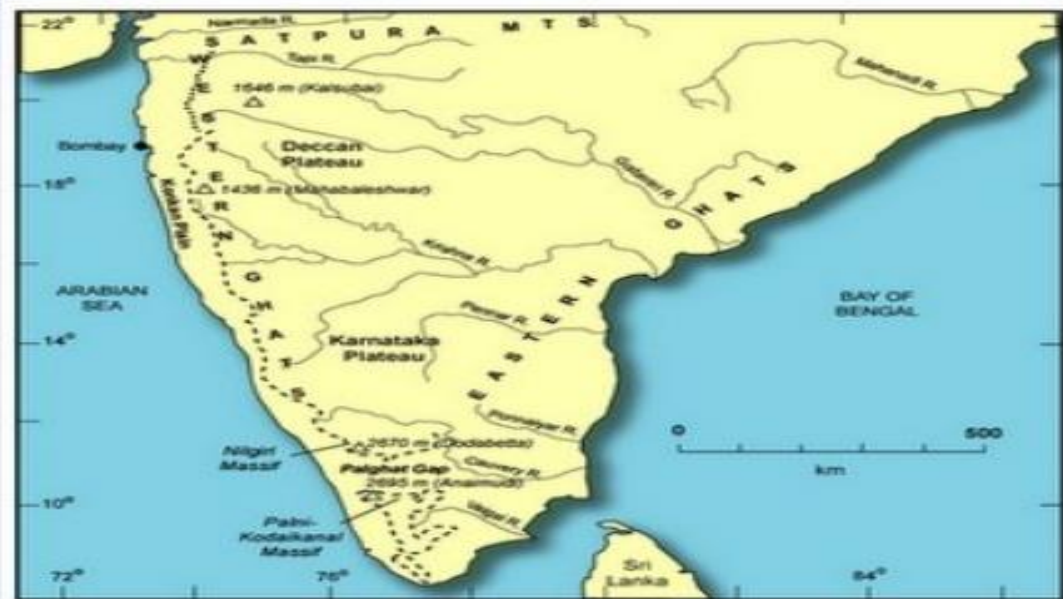
The East Coastal Plains

- Between the Eastern Ghats and East Coast of India are located the East Coastal Plains, extending from Subarnarekha river to Kanyakumari.
- Important rivers:
 - Mahanadi
 - Godavari
 - Krishna
 - Kaveri

The Eastern Coastal Plains

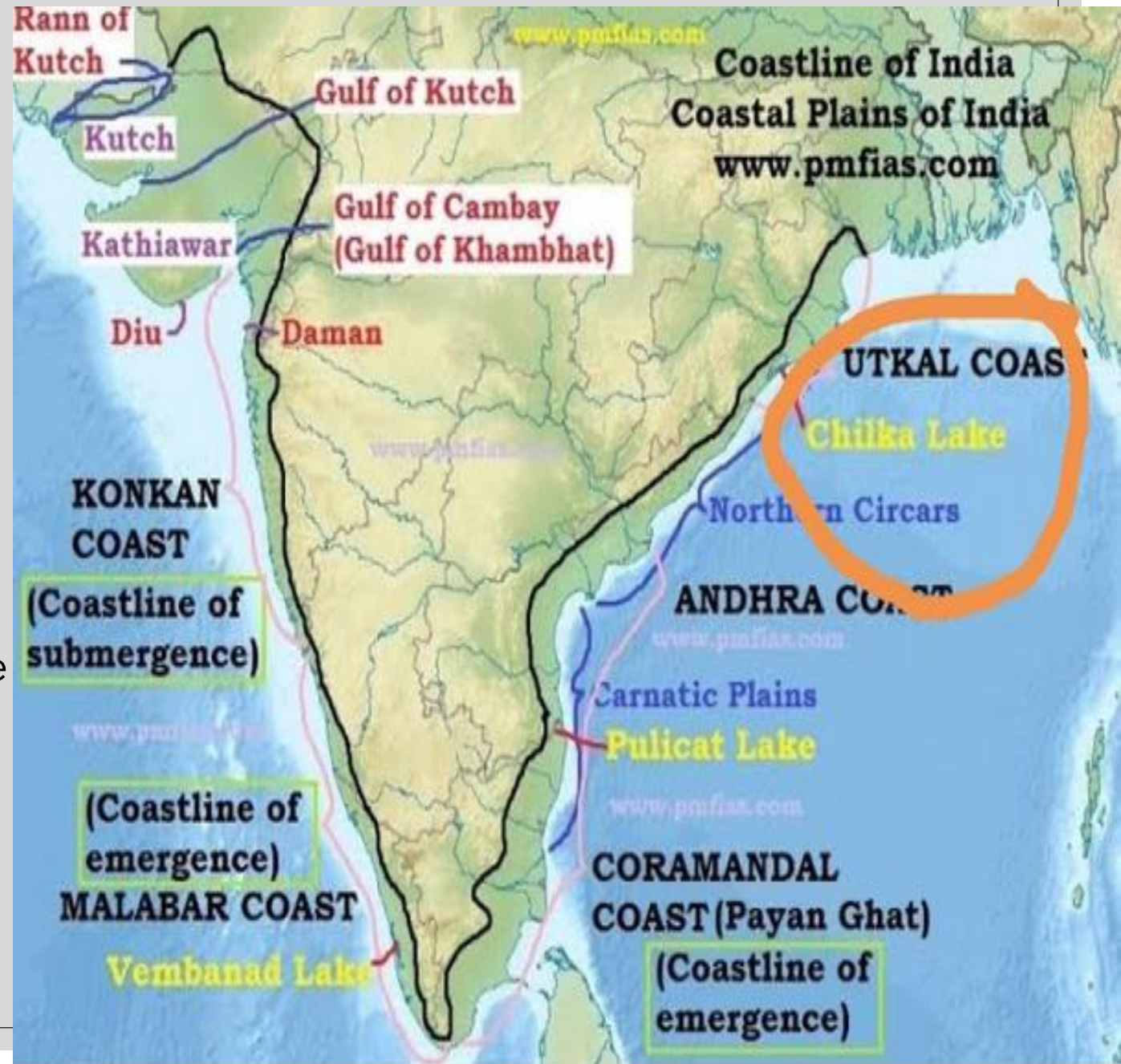
- It stretches from Tamil Nadu in the south to West Bengal in the north.
- The width of the plains varies between 100 and 130 km.
- The eastern coastal plains are wider and leveled than the western coastal plains and the region is divided into two parts.

- 1) The Northern Circa.
- 2) The Coromandel Coast.



The Utkal Plain

- It is the coastal area of Orissa.
- It is 400 km long.
- Includes the Mahanadi delta with Cuttack at its head.
- The most prominent physiographic feature of the plain is the Chilka Lake in the South of the Mahanadi Delta.



The Andhra Plain

- It lies south of the Utkal Plain, and extends up to Pulicat Lake.
- The lake has been barred by long sandspit known as Sriharikota Island on which is located the satellite launching station of Indian Space Research Organisation.
- Important Rivers:
 - Godavari
 - Krishna
 - Kolleru
- Important Ports:
 - Visakhapatnam
 - Machhlipatnam

Daman

Chilka Lake

KONKAN
COAST

Northern Circars

(Coastline of
submergence)

ANDHRA COAST

www.pmfias.com

www.pmfias.com

Carnatic Plains

Pulicat Lake

www.pmfias.com

(Coastline of
emergence)

MALABAR COAST

CORAMANDAL
COAST (Payan Ghat)

Vembanad Lake

(Coastline of
emergence)

Western Coastal plains

Eastern Coastal plains



The Tamil Nadu Plain

- It stretches from the Pulicat Lake to Kanyakumari, along the coast of Tamil Nadu.
- Important river: Kaveri - Kaveri Delta - Granary of South India

