



**VAJIRAO & REDDY INSTITUTE**

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# YOJANA MAGAZINE ANALYSIS

(April 2024)

(Part 1/3)

## TOPICS TO BE COVERED

### PART 1/3

- OUR ECOSYSTEM
- WESTERN GHATS

### PART 2/3

- SOIL ECOSYSTEM
- SACRED GROVES

### PART 3/3

- BLUE ECONOMY
- RAMSAR CONVENTION



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## OUR ECOSYSTEM

India has a **huge diversity of natural ecosystems**, from the **Himalayan mountains** to the **vast coastlines**, from the **dense green forests** of the **north-east** to the **scorching deserts of the north-west**, a variety of forests, swamps, islands and oceans.

With **80 Ramsar wetlands** and over **40 UNESCO World Heritage Sites**, vast plateaus, lush river plains and several large rivers, India has an incredibly versatile topography that delights travelers.

### FEATURES

- **THE HIMALAYAS:**
  - The Himalayas are the **highest mountain range** in the world.
  - It **separates the Indian landmass from the Tibetan Plateau**.
  - It has been **formed by the collision of the Indian plate with the Eurasian plate**, resulting in fold mountain system.
  - It runs from **west-northwest to east-southeast** direction in the form of an arc for about 2,400 km, **extending across five south Asian countries**.
  - Its width varies from **350 km in the west to 150 km in the east**.

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- Several **glaciers** are present within the range, including Gangotri Glacier and Satopanth Glacier.



- **THE NORTHERN PLAINS:**

- It runs for roughly 2400 km from west to east and stretches 240 to 320 km from north to south.
- It has formed from **sediments brought by rivers**, originating from uplifting Himalayas, and deposited in plains.

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- As the rivers originating from the Himalayas descend the hills, their **velocity decreases** and as a result, they dump much of their denser and coarser sediment fraction along the foothills in a narrow, porous, thin strip called **Bhabar** which is around 8 to 16 km wide.
- The **Terai belt** is located south of the Bhabar belt where streams go underground in the Bhabar belt resurfaces.
- Terai region is **densely forested** and has diverse flora and fauna and houses some of the famous national parks such as **Jim Corbett National Park** in Uttarakhand and **Kaziranga National Park** in Assam.
- **Bhangar**, which is an **older alluvium** that forms a terrace above the floodplain.
  - It is frequently covered in calcareous stone-like pebbles known as '**Kankar**'.
- An area made of alluvial soil, also present in the northern plains, and containing new alluvium is called **Khadar**.

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- **PENINSULAR PLATEAU:**

- It has a table-land type of topography.
- It has elevations of about 900-1200 m above mean sea level, dissected by numerous rivers, forming broad valleys.
- The plateau stretches from the **Aravalli Range** in the west to the **Chota Nagpur Plateau** in the east.

**Plateau** in the east.



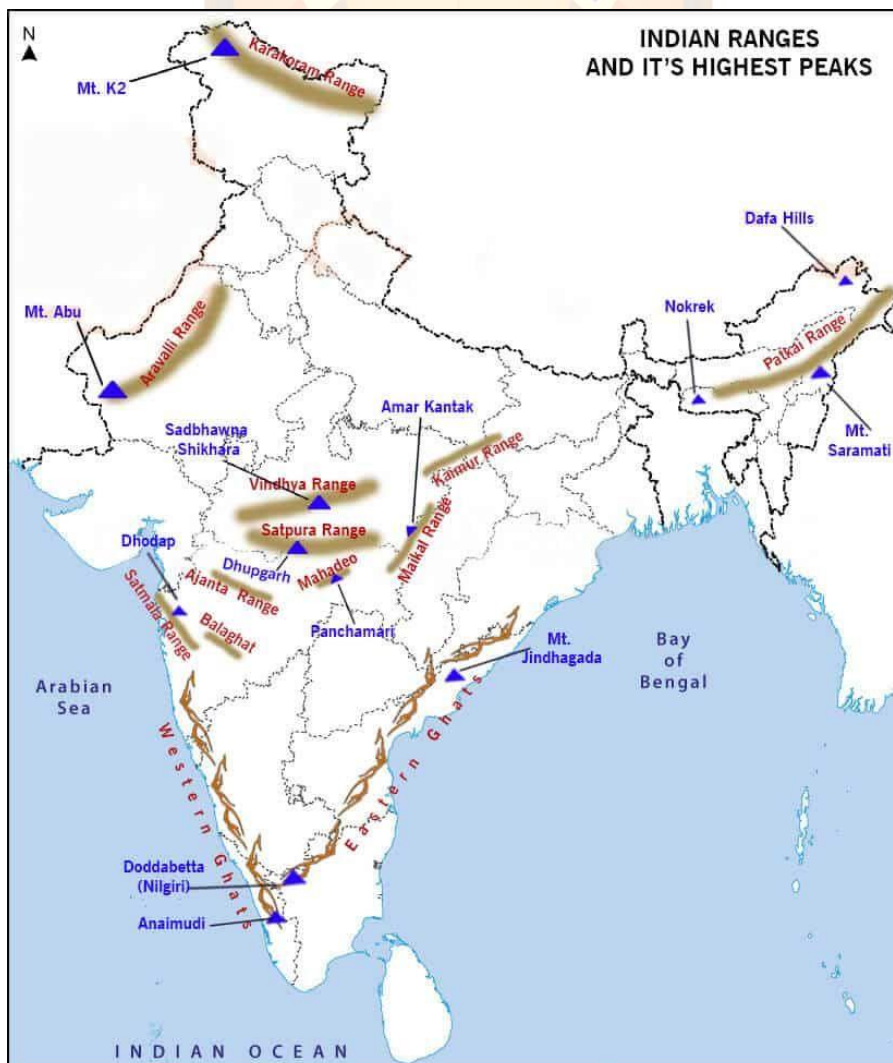
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○ It comprises important mountain ranges of Central India such as:

- Vindhyans,
- Satpuras,
- Mahadeo,
- Maikal and
- Sarguja ranges as well as
- The Western and Eastern Ghats.



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- It is **rich in mineral resources**. It contains mineral deposits, such as **iron, bauxite, mica, gold, copper, manganese**, etc.
- It has well-known mines like **Kolar, Hutti, Bailadila, Singhbhum, Korba, Malanjkhand**, etc.
- Most of the Gondwana **coal deposits** of India are found in the Peninsular Plateau.
- A large part of the plateau is covered with **fertile black soil** which is extremely useful for **growing cotton**.
- **THAR DESERT:**
  - It consists of **sand dunes, rocky terrain, salt flats, and sparse vegetation**.
  - The sand dunes, known as '**bhakar**', can reach heights of up to **150 m** and constantly shift with the wind.
  - The desert also features **dry riverbeds** called '**nullahs**'; which occasionally fill with water during the monsoon season.
  - The region is **rich in oil reserves** and is home to one of the largest onshore oil fields in India in Barmer Basin.
  - The region also has **one of the largest salt marshes** in the world called the '**Great Rann of Kutch**' Kutch is one of the major salt-producing districts in India.

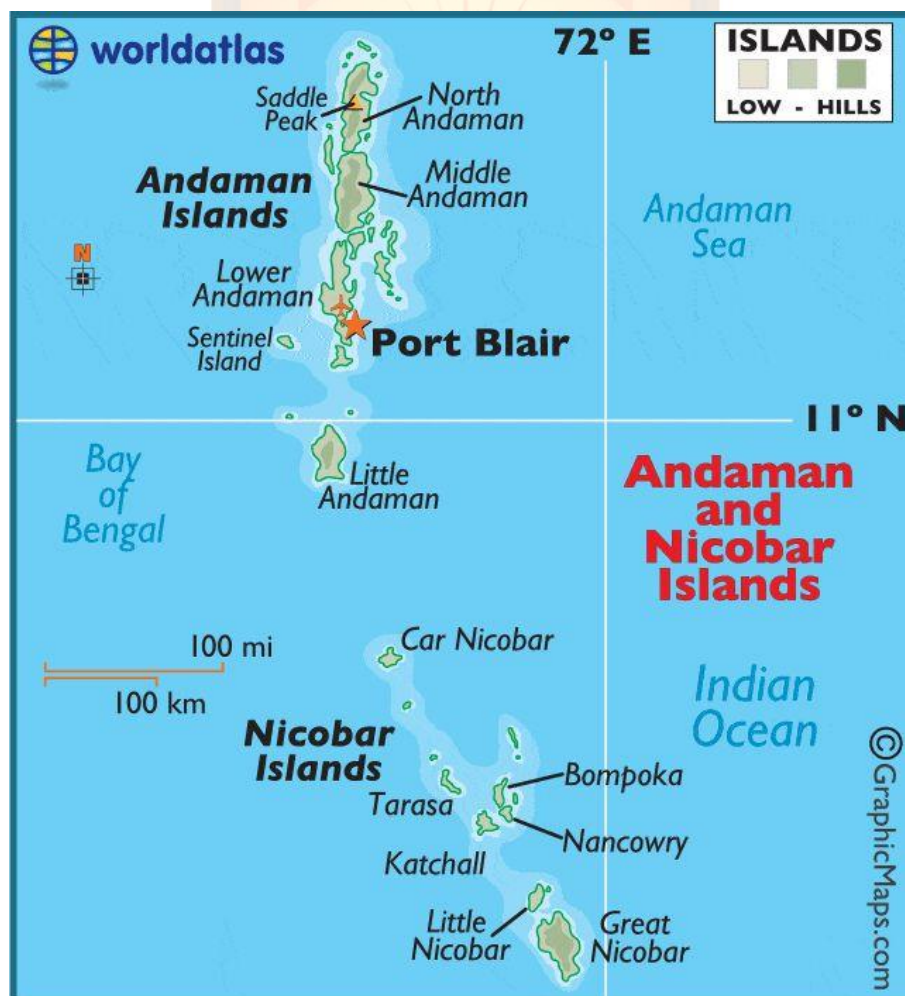
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- **ANDAMAN & NICOBAR AND LAKSHADWEEP ISLAND:**

- These islands are known for their **pristine beaches**, lush **tropical forests**, and **diverse marine life**.
- These are mainly **volcanic in origin**, formed by the eruption of lava due to plate movements.
- **Barren Island** in the Andaman Sea is **the only active volcano in India**.



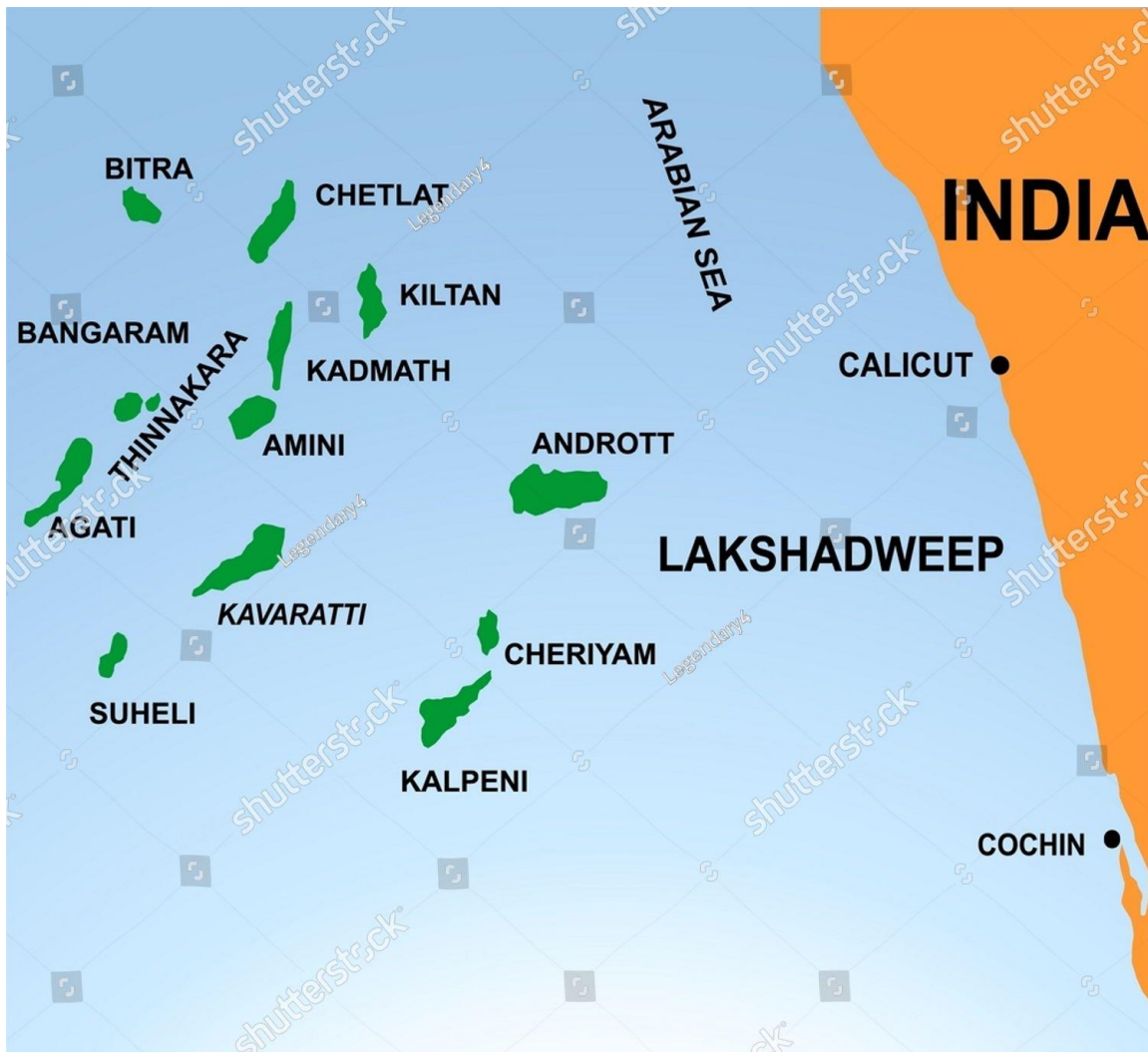
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- Another group of islands from the west coast of India is **Lakshadweep**, which is an archipelago of **36 islands**. These are mainly coral islands with unique marine flora and fauna.



## ECOSYSTEM CONSERVATION & HUMAN WELFARE

Ecosystem conservation and human well-being are closely linked.

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The **long-term sustainability** and **health of ecosystems**, while maintaining the importance of sustainability, conservation and respect for the natural world, are paramount for future generations.

Understanding our ecosystems is vital as we grapple with the challenges of the 21st century.

And the need to protect it is greater than ever.



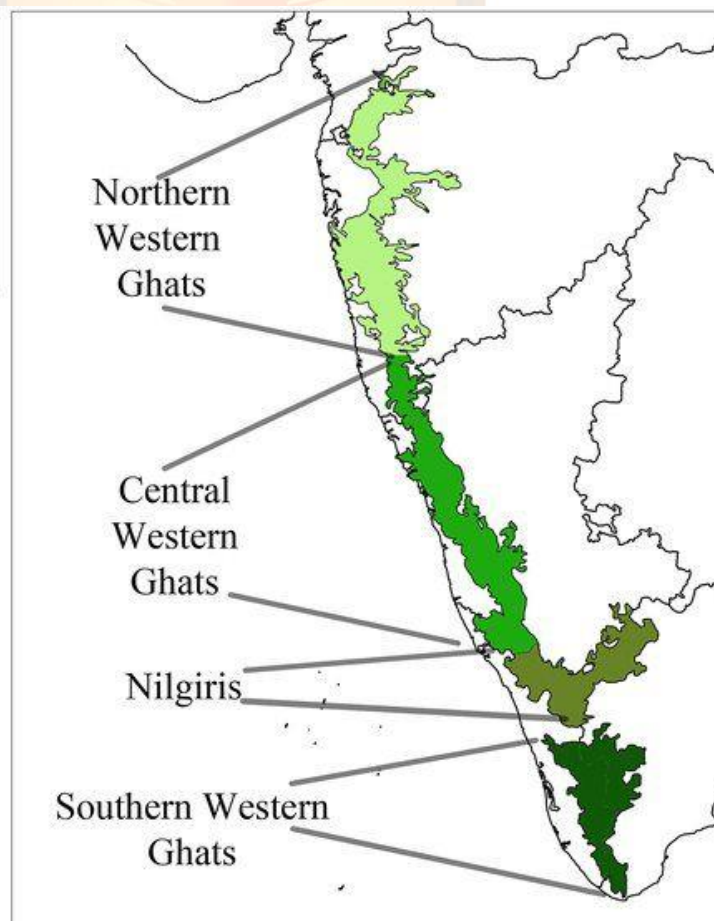
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## WESTERN GHATS

- The Western Ghats are recognized as a **biodiversity hotspot**.
- It holds the prestigious designation of a **UNESCO World Heritage Site**.
- It stretches from the river Tapti in the north to Kanyakumari in the South.
- It encompasses regions in six states: **Gujarat, Maharashtra, Goa, Karnataka, Kerala, and Tamil Nadu, and two Union Territories (Dadra & Nagar Haveli & Puducherry (Mahe))**



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## TOPOGRAPHY & NATURAL RESOURCES

- It holds significant importance from several perspectives.
- Its geomorphic value belongs to the **Malabar Rainforest** Biogeographic Province.
- Their positioning makes the **Western Ghats** bio geographically distinct and exceptionally biodiverse- a valuable repository of biological wealth.
- These are **older than the Himalayas** and hold the distinction of being an 'evolutionary ecotone.
- These mountains took shape millions of years ago during the **collision of the Indian subcontinent with the Eurasian plate.**
- As a result of this collision, the land was **thrust upward**, giving rise to the majestic mountains of the Western Ghats.
- They have an average elevation of around **1,200 metres** (3,900 ft), with several peaks reaching heights of up to **2,600 metres** (8,500 ft). Anamudi, located in Kerala, is the highest peak in the Western Ghats.
- The region is a **watershed for several major rivers**, including the Godavari, Krishna, Kaveri, and Tungabhadra, which provide water for irrigation, drinking, and hydropower generation to millions of people.

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- These mountains play a **pivotal role** in modulating India's climate by intercepting monsoon winds, preventing them from reaching the Deccan Plateau, and thus maintaining its cool, dry conditions.

## BIODIVERSITY:

- It is home to one of the highest levels of **endemism** globally.
- A total of **4,000 vascular plant species**, of which 1,500 were endemic, accounting for 37.5% of the total.
- Specifically, of the nearly **650 tree species** identified in the Western Ghats, 352 (54%) are found nowhere else.
- **Animal diversity** is equally remarkable, with amphibians (up to 179 species, 65% endemic), reptiles (157 species, 62% endemic), and fishes (219 species, 53% endemic), highlighting high levels of endemism.
- The **climatic and altitudinal gradient** of the Western Ghats has led to a diverse range of vegetation types, including evergreen, semi evergreen, moist deciduous, and dry deciduous vegetation.

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- Western Ghats have the following forest types- (i) dry scrub vegetation (ii) dry deciduous forests (iii) moist deciduous forests (iv) semi-evergreen forests (v) evergreen forests (vi) shoals; and (vii) high-altitude grasslands.
- The Western Ghats are home to a minimum of 325 species listed as globally threatened according to the IUCN Red List.

## THREATS

- **Habitat loss and fragmentation**, primarily driven by the cultivation of coffee, tea, palm, rubber, and other crops, leading to widespread deforestation.
- **Wildlife poaching**, deforestation, overfishing, and livestock grazing.
- **Excessive use of agrochemicals** in various plantations contributes to the deterioration of natural habitats.
- **Construction of railway lines**, mining operations, and tourist infrastructure in the mountainous areas.
- Policy implementation & inter state coordination.

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## CONSERVATION & MANAGEMENT

- Efforts have been made to **provide legal protection** to wildlife and habitats, designate protected areas, and recognize the rights of forest-dwelling communities.
  - It includes laws such as the **Environment (Protection) Act, Wildlife (Protection) Act, and Forest Rights Act**, declaration of **Eco-Sensitive Zone (ESZ)** etc,
- The Ministry of Environment, Forests, and Climate Change, State Forest Departments, and the National Biodiversity Authority play pivotal roles in overseeing conservation efforts.

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