



# International Mountain Day 2024

**For Prelims:** [Indian Himalayan Region](#), [United Nations](#), [Food and Agriculture Organization](#), Types of Mountain, [Mountain Ranges in India](#)

**For Mains:** Geography of the Indian Himalayan Region, Mountain Ecosystems, Indian Mountain Ranges

[Source: PIB](#)

## Why in News?

Recently, the Ministry of Environment, Forest and Climate Change observed **International Mountain Day 2024** (11th December) to highlight the need to protect the [Indian Himalayan Region \(IHR\)](#).

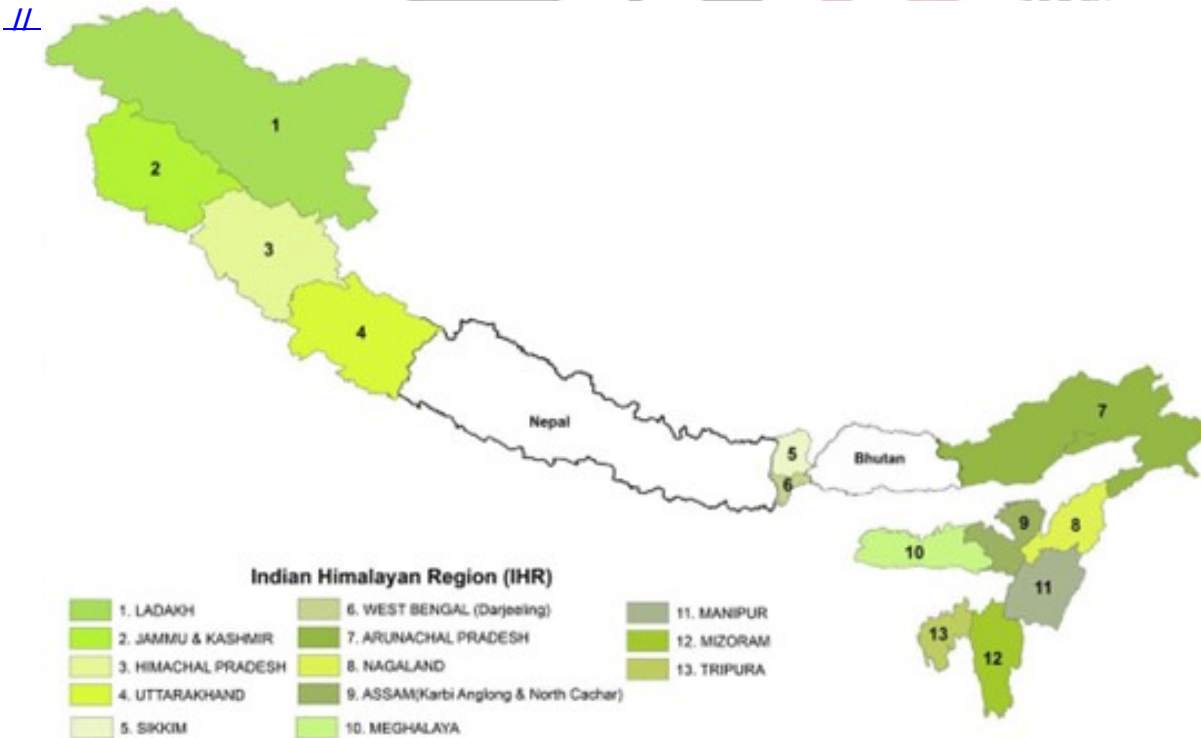
## What is International Mountain Day?

- **History:** International Mountain Day, observed on 11th **December**, was established by the [United Nations](#) in **2003** to raise awareness about sustainable development in mountains and their vital importance to life.
  - The [Food and Agriculture Organization \(FAO\)](#) plays a key role in coordinating this observance.
- **Theme 2024:** *Mountain solutions for a sustainable future - innovation, adaptation and youth.*
- **Importance of Mountains:** Mountains cover about **one-fifth of the Earth's surface** and are home to **15% of the world's population** and host half of the world's biodiversity hotspots.
  - They provide essential freshwater for half of humanity acting as "**water towers**", supporting agriculture, [clean energy](#), and health sectors.
  - Mountains are ecological treasures that need protection. Without them, many countries would face dry, barren land. Their preservation is key to sustainable development.

## What are the Key Facts About Indian Himalayan Region (IHR)?

- **Geographical Extent:** The IHR stretches across **13 Indian states/Union Territories**, including Jammu & Kashmir, Ladakh, Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh, and parts of West Bengal, Assam, Nagaland, Manipur, Mizoram, Tripura and Meghalaya.
  - It spans a distance of approximately **2,500 km** from west to east.
- **Tectonic Activity:** The IHR is tectonically active due to the ongoing collision between the [Indian Plate and the Eurasian Plate](#).
  - This has led to the formation of the **Himalayan mountains** and continues to shape the region's geological features.
- **Geological Diversity:** The region is rich in geological features, with varying rock formations, fault lines, and plateaus. There are [igneous, sedimentary, and metamorphic rocks](#) found in different sections of the Himalayas.
- **Significance:** The IHR covers about **16.2% of the country's total geographical area**.
  - The region is a **biodiversity hotspot**, home to numerous plant and animal species, some

- of which are endemic or endangered.
  - The region is the source of major river systems, including the **Ganga, Yamuna, Indus**, and **Brahmaputra**.
  - The region features various ecosystems, including **temperate forests, alpine meadows, glaciers, and snow-capped peaks**.
    - It is home to iconic wildlife such as the **snow leopard, Himalayan tahr, red panda**, and the **one-horned rhinoceros**.
  - The IHR plays a critical role in **regulating the climate** of the Indian subcontinent by acting as a barrier to **cold, dry Arctic winds** and influencing the **monsoon patterns**.
    - The region also helps in **carbon sequestration** through its forests, contributing to the global fight against climate change.
  - The IHR acts as a natural **border** between India and several neighboring countries like **China, Nepal, Bhutan, and Pakistan**.
- **Concerns:**
- **Unsustainable Development:** Activities like **deforestation, Hydropower Projects in Himalayas**, and infrastructure projects like **Char Dham Project** disrupt ecosystems and contribute to **disasters**.
  - **Climate Change Impact:** Glacial melting and expanding lakes increase **flood risks**, while temperature rise affects water resources.
    - Events like floods in Himachal Pradesh, and **glacial lake outbursts** in Sikkim highlight the consequences.
  - **Cultural Erosion:** The IHR is **home to indigenous communities** with valuable traditional knowledge for sustainable resource management, but modernisation threatens to **erode these cultural practices**.
  - **Rising Tourism:** Tourism generates **8 million tonnes of waste annually**, with **projections indicating 240 million tourists by 2025**.
    - The region's fragile ecology is under threat, as waste often ends up polluting land, water, and air due to the **lack of space for disposal in mountain towns**.



## What Can be Done to Protect Indian Himalayan Region?

- **Sustainable Tourism:** Promote **eco-tourism**, enforce carrying capacity limits, and raise awareness to generate income for locals while minimizing environmental impact.
- **Glacial Water Capture:** Implement methods to capture and **store glacial meltwater** for use

during dry periods to support agriculture and ecosystems.

- **Disaster Preparedness:** Develop **disaster management plans** for the region, focusing on **landslides, avalanches, and glacial lake outburst floods**, with early warning systems and community training.
- **Greywater Recycling:** Set up systems to recycle household greywater for agricultural use, enhancing water security and crop growth.
- **Bio-Cultural Conservation Zones:** Designate areas to preserve both natural biodiversity and indigenous cultural practices.
- **Integrated Development:** Establish a “Himalayan Authority” for coordinated development and monitoring of Sustainable Development Goals across the region.

## How are Mountains Formed?

- **Formation:** Mountains are formed by movement within the Earth's crust, which consists of **tectonic plates floating on molten magma**.
  - These plates shift and collide over time, creating pressure that causes the Earth's surface to **buckle or protrude, forming mountains**.
- **Key Characteristics:**
  - **Elevation:** Mountains are generally higher than the surrounding land, with elevation often exceeding 600 meters.
  - **Steep Slopes:** Mountains typically have steep slopes, though some can be more gradual.
  - **Summit/Peak:** The top of a mountain is called the summit, which is often the highest point.
  - **Mountain Range:** A series or group of mountains connected by high ground forms a mountain range.

## What are the Types of Mountain?

- **Based on Mode of Origin:**
  - **Volcanic Mountains:** Formed by the eruption of magma from the Earth's crust, creating peaks like those in Hawaii and Fiji.
  - **Fold Mountains:** Created by the collision and folding of tectonic plates, such as the **Himalayas and the Andes**.
  - **Block Mountains:** Formed by faulting and the movement of **large blocks of the Earth's crust**, leading to raised or dropped sections, like the Sierra Nevada.
  - **Dome Mountains:** Created by magma pushing the Earth's crust upward, forming a **dome-like structure**, often exposed after erosion like Black Hills (US).
  - **Plateau Mountains:** These mountains resemble dome mountains but are formed by **colliding tectonic plates pushing up the land**, shaped by **weathering and erosion**.
- **Based on Period of Origin:**
  - **Precambrian Mountains:** Precambrian mountains are ancient ranges formed during the Precambrian era (4.6 billion to 541 million years ago).
    - They have experienced extensive erosion and metamorphism over billions of years, leaving behind residual formations (e.g., **Aravallis in India**).
  - **Caledonian Mountains:** Formed around 430 million years ago (e.g., Appalachians).
  - **Hercynian Mountains:** These mountains originated from the Carboniferous to Permian Period (approximately 340 million years and 225 million years) (e.g., Ural Mountains).
  - **Alpine Mountains:** The youngest mountain systems formed during the Tertiary period (66 million years ago) (e.g., Himalayas, Alps).

## What are the Key Facts About Mountain Ranges in India?

- **The Himalayas:** The most famous and **highest mountain range in India**, stretching over 2,900 kilometers along the border between India and Tibet.
  - The Himalayas are divided into three main ranges, **Himadri (Great Himalayas or Inner Himalayas), Himachal (Lesser Himalayas), Shiwaliks (Outer Himalayas)**.
  - **Mount Everest (Sagarmatha/Chomolungma)** is the highest peak in the Himalayas and

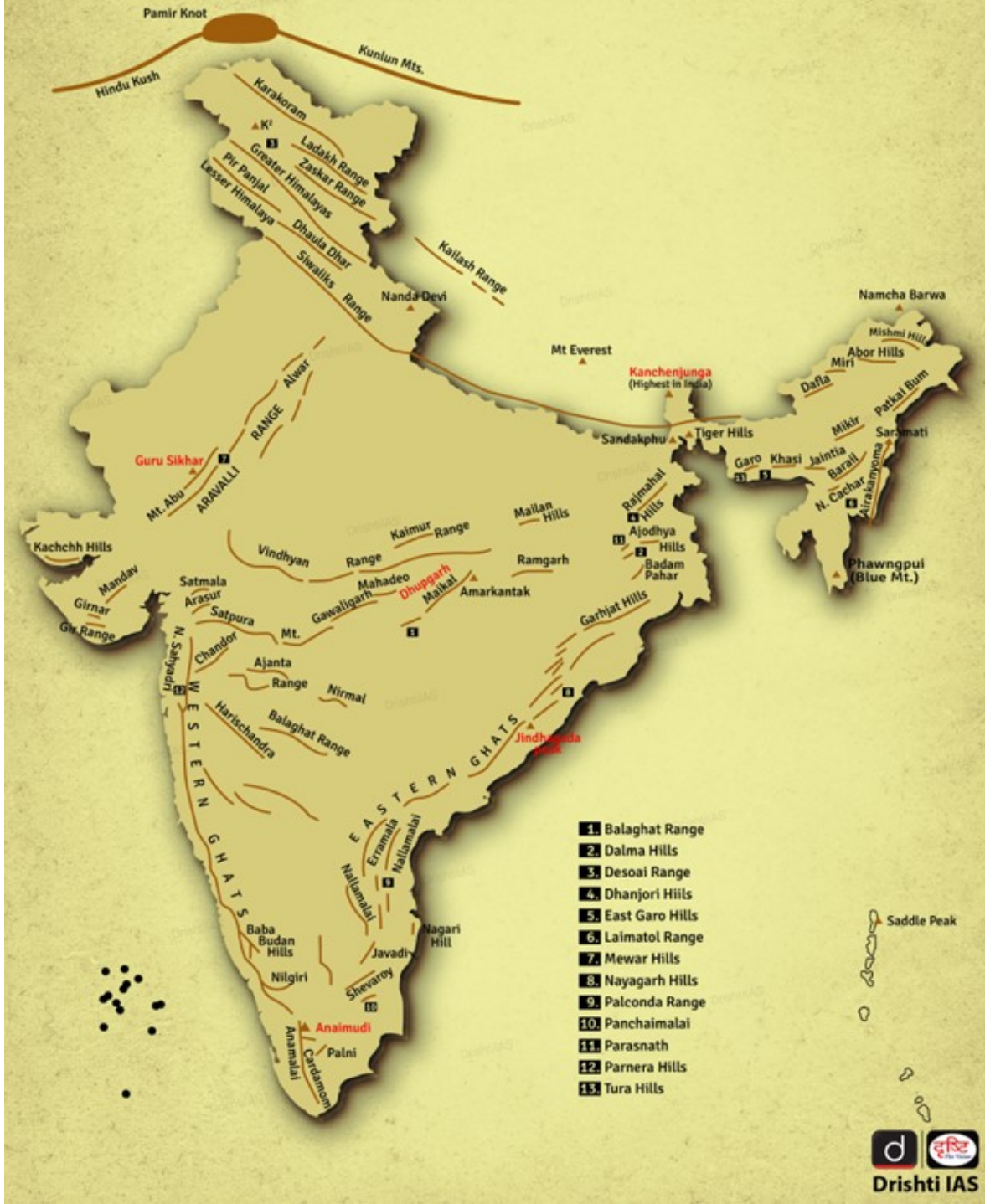
the world, standing at an elevation of 8,848.86 meters above sea level. Other notable peaks in the range include **K2**, **Kanchenjunga**, and **Makalu**.

- **Western Ghats:** The **Western Ghats** (Sahyadri Hills) runs parallel to the western coast of India and has an average elevation of about 1,200 meters.
  - The highest peak is **Anamudi**. The Western Ghats are known for their rich biodiversity and are a **UNESCO World Heritage Site**.
  - The **Western Ghats are block mountains formed** by the downwarping of land into the Arabian Sea.
- **Eastern Ghats:** The **Eastern Ghats** runs parallel to the eastern coast of India. The highest peak is Arma Konda at 1,680 meters.
- **Aravalli Range:** One of the oldest mountain ranges in the world, stretching for about 800 kilometers across north - western India,. The **highest peak is Guru Shikhar** at 1,722 meters
- **Vindhya Range:** The **Vindhya range** runs across central India and is known for its historical significance. The highest point is **Sadbhawna Shikhar** at 752 meters.
  - The Vindhya Range is located to the south of the **Malwa Plateau** and runs in an east-west direction, parallel to the Narmada Valley.
- **Satpura Range:** Located in central India, this range has peaks like Dhupgarh, which is the highest at 1,350 meters.





# MOUNTAIN RANGES IN INDIA



**Drishi Mains Question:**

Explain the process of mountain formation with specific reference to fold mountains and their significance for the Indian subcontinent.

**UPSC Civil Services Examination, Previous Year Questions (PYQ)**

**Prelims**

**Q. When you travel in Himalayas, you will see the following: (2012)**

1. Deep gorges
2. U-turn river courses
3. Parallel mountain ranges
4. Steep gradients causing land sliding

**Which of the above can be said to be the evidence for Himalayas being young fold mountains?**

- (a) 1 and 2 only  
(b) 1, 2 and 4 only  
(c) 3 and 4 only  
(d) 1, 2, 3 and 4

**Ans: (d)**

**Mains**

**Q. Bring out the causes for more frequent landslides in the Himalayas than in Western Ghats. (2013)**

**Q. Describe the various causes and the effects of landslides. Mention the important components of the National Landslide Risk Management Strategy. (2021)**

PDF Reference URL: <https://www.drishtiias.com/printpdf/international-mountain-day-2024>

