



Indian Himalayan Region

For Prelims: [Himalayan region](#), [Swachh Bharat Mission-Gramin](#), [Biodiversity](#), [Glacier retreat](#), [Earthquakes](#), [Landslides](#), [Flash flood](#), [Glacial lake outburst floods](#).

For Mains: Challenges Associated with Indian Himalayan Region

Source: DTE

Why in News?

The [Himalayan region](#), renowned for its **breathtaking landscapes and cultural heritage**, faces a pressing need to address **sanitation issues** that have long been overshadowed by concerns over **illegal construction and surging tourist influx**.

- A recent analysis conducted by the **Centre for Science and Environment (CSE)**, highlighted the dire state of sanitation systems in Himalayan states.

What are the Major Highlights of the Analysis?

- **Water Supply and Wastewater Generation:** According to [Swachh Bharat Mission-Gramin guidelines](#), each hill town receives **approximately 150 liters per capita of water supply**.
 - Alarmingly, **65-70% of this water supply is converted into wastewater**.
- **Grey Water Management Challenges:** In Uttarakhand, **merely 31.7% of households are connected to sewerage systems**, leaving the majority reliant on on-site sanitation facilities.
 - Both households and small hotels frequently resort to **using soak pits to manage grey water**, generated from bathrooms and kitchens.
 - The presence of unlined open drains in some towns leads to the unregulated flow of grey water, **exacerbating its infiltration into the ground**.
- **Implications for Soil and Landslides:** The Himalayan region's soil makeup, including **clayey, loamy, and metamorphosed schist, phyllite, and gneiss rocks**, is inherently delicate.
 - The **excessive seepage of water and wastewater into the ground**, as observed in the analysis, can render the soil softer and trigger vulnerability to landslides.

What are the Other Challenges Associated with the Indian Himalayan Region?

- **About:**
 - The Indian Himalayan Region (IHR) is spread across 13 Indian States/Union Territories (namely **Jammu and Kashmir, Ladakh, Uttarakhand, Himachal Pradesh, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Assam and West Bengal**), stretching across 2500 km.
 - Nearly **50 million people reside in this region**, which is characterized by a diverse demographic, and versatile economic, environmental, social and political systems.
 - With its **towering peaks, majestic landscapes, rich biodiversity and cultural heritage**, the IHR has long drawn visitors and pilgrims from the Indian sub-

continent and across the world.

▪ **Challenges:**

- **Environmental Degradation and Deforestation:** The IHR faces **extensive deforestation**, which disrupts the delicate ecological balance.
 - Rampant construction for infrastructure and **urbanization** leads to habitat loss, soil erosion, and disrupted water flow.
- **Climate Change and Disasters:** The IHR is **highly sensitive to climate change**. Rising temperatures lead to **glacier retreat**, altering the **timing and availability of water resources** for downstream communities.
 - **Erratic weather patterns**, increased intensity of rainfall, and prolonged dry spells further impact ecosystems and local communities.
 - The region is also highly susceptible to natural disasters like **earthquakes**, **landslides**, and **flash floods**.
 - Poorly planned development, lack of disaster-resilient infrastructure, and inadequate early warning systems amplify the impact of such events.
- **Cultural and Indigenous Knowledge Erosion:** The IHR is home to diverse indigenous communities with unique knowledge and practices that have sustained them for generations.
 - However, **modernization can lead to the erosion of these cultural traditions**, which often contain valuable insights for sustainable resource management.

Way Forward

- **Nature-Based Tourism:** Develop sustainable and responsible tourism practices that **generate income for local communities** while **minimizing negative impacts on the environment**.
 - This could involve promoting **eco-tourism**, **enforcing carrying capacity limits**, and raising awareness among tourists.
- **Glacial Water Capture:** Develop innovative methods to **capture and store meltwater from glaciers** during the summer months.
 - This water can then be **released gradually during dry periods**, supporting both agricultural needs and downstream ecosystems.
- **Disaster Preparedness and Mitigation:** Develop comprehensive disaster management plans that address the unique risks of the region, including **landslides, avalanches, and glacial lake outburst floods**. Invest in early warning systems, evacuation plans, and community training.
- **Greywater Recycling for Agricultural Enrichment:** There is a need to implement a greywater recycling system in IHR that **collects and treats household greywater** for agricultural use.
 - The treated greywater could then be **directed to local farms for irrigation**, providing a sustainable source of water and nutrients to enhance crop growth.
- **Bio-Cultural Conservation Zones:** Designate specific areas as bio-cultural conservation zones, where both **natural biodiversity and indigenous cultural practices are preserved**. This can help maintain the intricate relationship between local communities and their environment.

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)**

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