Mains Practice Question

Q. The Eastern and Western Ghats are two major mountain ranges in India, yet their influence on climate and agriculture differs significantly. Discuss. **(150 words)**

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Approach

- Introduce the answer by mentioning Eastern and Western Ghats
- Delve into the Contrasting Influence of Eastern and Western Ghats on Climate and Agriculture
- Conclude suitably.

Introduction

The **Eastern and Western Ghats** stand as testaments to the beauty of Indian geography. Yet, despite their shared designation as mountain ranges, their influence on the nation's climate and agricultural practices is a tale of contrasting embraces.

Body

Contrasting Influence of Eastern and Western Ghats on Climate and Agriculture:

- **Rainfall Patterns:**
  - **Western Ghats:** Acts as a rain barrier. The southwest monsoon winds carrying moisture rise due to the Western Ghats, leading to **heavy orographic rainfall on the western slopes (Kerala, Maharashtra).**
    - This creates a rain shadow effect on the eastern side (Deccan Plateau) with significantly less precipitation.
  - **Eastern Ghats:** Limited impact on monsoon deflection. Due to their lower elevation and discontinuous nature, the Eastern Ghats **have a lesser influence on monsoon patterns.**
    - However, they allow some of the remaining moisture to reach the coastal plains of **Andhra Pradesh and Tamil Nadu,** contributing to moderate rainfall.
- **Temperature Regulation:**
  - **Western Ghats:** Moderate coastal temperatures. The Western Ghats act as a physical barrier, preventing the **hot, dry winds from the Deccan Plateau from reaching the western coast**. This maintains a more pleasant and humid climate along the Malabar Coast.
  - **Eastern Ghats:** Minimal impact on temperature. Due to their lower elevation and fragmented nature, the Eastern Ghats have a **minimal influence on regulating regional temperatures.** The adjoining areas experience seasonal variations more directly.
- **Influence on Vegetation:**
  - **Western Ghats:** Promote **lush, evergreen forests.** The high rainfall and moderate temperatures create ideal conditions for dense forests with rich biodiversity.
    - This vegetation **further influences rainfall patterns by promoting evapotranspiration** and contributes to cooler temperatures.
  - **Eastern Ghats:** Support **drier deciduous forests and scrublands.** The lower and more

erratic rainfall patterns in the rain shadow of the Eastern Ghats lead to the growth of drier forests with seasonal shedding of leaves.
        - **Shrublands and grasslands** are also common, adapted to the harsher conditions.
- **Influence on Agriculture:**
    - **Western Ghats:** Favor plantation agriculture. The high rainfall and moderate temperatures create ideal conditions for plantation crops like **coffee, tea, cardamom, and spices.**
        - Additionally, the fertile soils on the slopes support the cultivation of fruits like **mangoes and bananas**.
    - **Eastern Ghats:** Promote mixed farming and drought-resistant crops. The moderate and often erratic rainfall patterns necessitate a mix of crops with varying water requirements.
        - **Pulses, millets, cotton, and some oilseeds** are commonly cultivated. Additionally, drought-resistant crops like **sorghum and pearl millet** are crucial for food security in these regions.
- **Water Resource Management:**
    - **Western Ghats**: Act as natural water towers. The dense forests in the Western Ghats capture and **store rainwater, feeding numerous perennial rivers that flow westward.** These rivers are crucial for irrigation and water supply in the region.
    - **Eastern Ghats**: Limited impact on major river systems. The Eastern Ghats have a smaller network of rivers compared to the Western Ghats.
        - However, they contribute to the flow of some major rivers like the **Godavari and Mahanadi,** playing a vital role in eastern India's water resources.

Conclusion

Both mountain ranges are facing unique challenges in the context of **climate change, population pressure, and developmental needs**. The conservation and sustainable management of these crucial ecological regions are imperative for India's environmental stability, food security, and overall sustainable development