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Keywords – General Environment

1. Ecological carrying capacity
2. Ecosystem services
3. Planetary boundaries
4. Anthropocene
5. Sustainable development
6. Common but differentiated responsibilities (CBDR)
7. Intergenerational equity
8. Environmental Kuznets Curve
9. Precautionary principle
10. Polluter pays principle

Climate Change & Policy

11. Net-Zero by 2070
12. Intended Nationally Determined Contributions (INDCs)
13. National Action Plan on Climate Change (NAPCC)
14. State Action Plans on Climate Change (SAPCCs)
15. Green Climate Fund (GCF)
16. Just Energy Transition
17. Loss and Damage Fund (COP27)
18. Climate Smart Agriculture
19. Adaptation vs Mitigation
20. Climate resilience

Conservation & Biodiversity

21. Biodiversity hotspots (Himalaya, Indo-Burma, Sundalands, Indo-Malayan)
22. Endemic species
23. Invasive Alien Species (IAS)
24. Biological corridors
25. Eco-sensitive zones (ESZs)
26. People's Biodiversity Register (PBR)
27. Bioprospecting & Biopiracy
28. Payment for Ecosystem Services (PES)
29. Biodiversity Act 2002
30. International Big Cat Alliance (IBCA)

Forests & Wetlands

31. Forest Rights Act (FRA) 2006
32. Compensatory Afforestation Fund Management & Planning Authority (CAMPA)
33. Joint Forest Management (JFM)
34. Ramsar Convention 1971
35. Wetland (Conservation and Management) Rules 2017
36. Mangrove Alliance for Climate (MAC)
37. REDD+ (Reducing Emissions from Deforestation and Forest Degradation)
38. National Green Mission
39. Afforestation vs Reforestation
40. Blue carbon ecosystems

Pollution & Governance

41. Air Quality Index (AQI)
42. Commission on Air Quality Management (CAQM)
43. Extended Producer Responsibility (EPR)
44. Circular Economy
45. Waste-to-Wealth Mission
46. Environmental Impact Assessment (EIA)
47. National Green Tribunal (NGT)
48. Basel, Stockholm, and Rotterdam Conventions
49. Bio-remediation and Phyto-remediation
50. Zero-budget natural farming (ZBNF)

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1. Biodiversity Hotspots in India

Keywords: Himalaya, Indo-

Burma, Sundalands

(Nicobar), Indo-Malayan.

Facts/Data

1. India has 4 biodiversity hotspots covering ~23% of land area.
2. Contributes ~7–8% of world's biodiversity, despite 2.4% of landmass.
3. IUCN Red List 2023: 683 Indian species critically endangered.
4. US has ~59 protected areas as "hotspots"; India has 104 national parks + 564 sanctuaries.
5. China has ~34% forest cover; India ~24.6% (ISFR 2021).

Examples: Western Ghats UNESCO site; Kaziranga NP under poaching threats.

Conclusion: India's hotspots are lifelines of ecological security; conservation requires balancing livelihoods with global commitments.

2. Climate Change & India

Keywords: COP26–2070 net zero, INDC, National Action Plan on Climate Change (NAPCC).

Facts/Data

1. India = 3rd largest emitter, but per capita emissions = 2 tCO_2 vs USA 14, China 7.
2. Committed to 500 GW renewables by 2030.
3. Lost $87 billion to climate disasters in 2020 (WB).
4. BRICS share ~41% of CO_2 emissions globally.
5. 2023 IMD: 2022 was India's 5th warmest year since 1901.

Examples: Chamoli GLOF 2021; Chennai floods 2015.

Conclusion: India must align growth with resilience—its climate strategy is a global equity test.

3. Pollution Challenges

Keywords: AQI, stubble

burning, vehicular emissions,

industrial effluents.

Facts/Data

1. 14 of world's 20 most polluted cities are in India (IQAir 2022).
2. Air pollution kills ~1.6 million annually in India (Lancet 2022).
3. Per capita coal use India ~0.7 t vs China ~2.3 t.
4. US Clean Air Act cut emissions by 73% since 1970; India still struggles with enforcement.
5. NCR smog linked to stubble burning from Punjab–Haryana (35% contribution in winter).

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Examples: Odd–even scheme Delhi; Commission on Air Quality NCR.

Conclusion: Pollution is both a development and governance crisis—strict enforcement and behavioural change needed.

4. Conservation Strategies

Keywords: In-situ (PAs, biosphere reserves), ex-situ (zoos, seed banks), CAMPA, eco-sensitive zones.

Facts/Data

1. India: 5% area under PAs vs global average ~15%.
2. Tiger population: 3,167 in 2022, 70% of global tigers.
3. US: Yellowstone = first national park (1872); India = Jim Corbett (1936).
4. Ex-situ – 30+ gene banks, 18 botanical gardens.
5. China's panda conservation = flagship success; India's Project Tiger = parallel.

Examples: IBCA (Big Cat Alliance, 2023);

Eco-sensitive zone controversies around

Kerala. Conclusion: Conservation must

adapt to dual challenges of biodiversity loss

+ climate change.

5. Environmental Governance in India

Keywords: EPA 1986, FRA 2006, FCA 1980, EIA.

Facts/Data

1. India ranks 168/180 in EPI 2020 (Yale).
2. Forest cover = 24.6% (ISFR 2021), below 33% target.
3. US EPA budget = $9B, India's MoEFCC = ₹3,000 crore.
4. BRICS: Brazil's Amazon deforestation = major global issue; India faces Himalayan deforestation.
5. 2022 Draft EIA diluted public consultation—controversial.

Examples: Sterlite protest Tamil Nadu; Goa mining ban.

Conclusion: Environmental governance needs balance—neither stifling development nor neglecting sustainability.

6. Climate Finance

Keywords: Green Climate Fund (GCF),

carbon markets, climate equity, Just

Transition. Facts/Data

1. India needs $10 trillion till 2070 for net-zero (IEA 2021).
2. Developed nations pledged $100B annually (Paris Agreement), actual flows ~$83.3B in 2020.

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3. India's domestic green bond market crossed $20B issuance in 2023, China >$100B.
4. US spends ~1.4% of GDP on green transition, India <0.5%.
5. BRICS collectively control ~41% of emissions but receive <30% of climate finance.

Examples: Sovereign green bonds (₹16,000 crore, 2023); ISA (International Solar Alliance).

Conclusion: Without equitable climate finance, net-zero risks becoming a mirage for the Global South.

7. Renewable Energy Transition

Keywords: Solar, wind, green hydrogen, energy mix, distributed generation.

Facts/Data

1. India = 4th largest renewable producer (175 GW installed, 2023).
2. Target: 500 GW renewables by 2030.
3. Solar tariffs in India among the world's lowest (~₹2/unit).
4. China dominates supply chain: 80% solar PV manufacturing.
5. India's coal share still >70% in power generation.

Examples: Rewa Solar Park (Madhya Pradesh); Green Hydrogen Mission (2023).

Conclusion: Renewables can be India's growth engine if storage, grids, and manufacturing bottlenecks are resolved.

8. Wetlands & Ramsar Sites

Keywords: Ramsar Convention 1971, ESZs, carbon sink, biodiversity reservoir.

Facts/Data

1. India has 75 Ramsar sites (2023), covering 1.1M hectares (largest in Asia).
2. Wetlands provide ecosystem services worth ₹47,000 crore annually (MoEFCC).
3. 30% of wetlands lost in last 3 decades (ISRO).
4. US has 41 Ramsar sites; China 64.
5. 2022: India declared 26 new sites in "Azadi ka Amrit Mahotsav" year.

Examples: Loktak Lake (Manipur); Chilika Lake (Odisha).

Conclusion: Wetlands are nature's kidneys—protecting them is critical for water, livelihoods, and biodiversity.

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9. Forest Rights & Tribal Communities

Keywords: FRA

2006, JFM,

CAMPA,

community rights.

Facts/Data

1. ~200M people in India depend directly on forests.
2. FRA 2006 recognised rights of 1.7M tribal households, but implementation <50%.
3. Brazil's Amazon deforestation surged 22% in 2021; India losing 1.6 M ha annually.
4. China has 23% forest-based employment; India ~12%.
5. CAMPA corpus = ₹54,000 crore (2022).

Examples: Niyamgiri Gram Sabha rejecting

Vedanta mining; JFM success in Madhya

Pradesh. Conclusion: Empowering forest

communities ensures both social justice and

ecological security.

10. Eco-Tourism

Keywords: Sustainable

tourism, carrying capacity,

community livelihood.

Facts/Data

1. Tourism contributes 6.8% to India's GDP (WTTC 2023).
2. Eco-tourism = only ~2% of total sector.
3. Sikkim: 30% households linked to eco-tourism initiatives.
4. Bhutan earns $350M annually from "High Value, Low Volume" eco-tourism.
5. UNWTO 2022: Global eco-tourism market ~$180B, CAGR 14%.

Examples: Periyar Tiger Reserve eco-tourism; Kaziranga jeep safari controversies.Conclusion: Eco-tourism, if community-driven and regulated, is a win-win for livelihoods and conservation.