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Earth's Desertification Crisis: UNCCD COP16 to Address Global Land Challenges

Context: The **16th Session of the Conference of Parties (COP16)** to the United Nations Convention to Combat Desertification (UNCCD) will take place from December 2-13, 2024, in Riyadh, Saudi Arabia. Marking the **30th anniversary of the UNCCD**, this pivotal event will focus on urgent global challenges such as desertification, land degradation, and drought.



GS Paper 2 – Environment and Ecology

Key Highlights of COP16

Theme: "Our Land and Our Future"

This year's theme underscores the vital role of land restoration and resilience-building in achieving sustainable development and tackling climate change.

A Historic Venue

Holding COP16 in **Saudi Arabia**, a region severely impacted by **desertification** and **drought**, emphasizes the immediate need for solutions tailored to regions facing such extreme conditions.

Largest UN Land Conference to Date With participation from 197 parties across the globe, COP16 is set to be the **largest-ever UN land conference**, bringing together policymakers, experts, and stakeholders.

A Dual Approach

- 1. Negotiation Track: Focuses on political declarations and decisions to guide global efforts on land degradation and drought resilience.
- 2. Action Agenda: Highlights voluntary commitments, multi-stakeholder dialogues, and practical implementation strategies.

Key Objectives of COP16

- Accelerating Land Restoration: Aimed at achieving a land-degradation-neutral world by 2030.
- Enhancing Resilience: Tackling droughts, dust storms, and other land-related crises.
- **Promoting Soil Health**: Improving **land rights** and ensuring **sustainable livelihoods**.
- Unlocking Economic Opportunities: Using land restoration to generate jobs, alleviate poverty, and boost **climate resilience**.

The Riyadh Action Agenda

A flagship outcome of COP16, the **Riyadh Action Agenda** will focus on scaling up solutions through **thematic** days dedicated to:

- Land conservation and restoration.
- Building drought resilience.
- Strengthening partnerships for **actionable results**.

The Global Context: A Growing Crisis

- **3.2 billion people** are affected by **desertification** worldwide.
- **Droughts** have increased by 29% since 2000, exacerbated by climate change and unsustainable land use.
- **Land degradation** has led to economic losses of \$11 trillion globally.

Projected Impacts by 2050

- Over 216 million people could face internal displacement due to climate-induced land **degradation** and drought.
- To meet global targets, **1.5 billion hectares of degraded land** must be restored by **2030**.

Root Causes of the Crisis

- **Erratic Rainfall**: Unpredictable weather patterns limit natural water resources.
- **Over-reliance on Groundwater**: Depleting reserves due to unsustainable extraction.
- **Decline in Recharge Systems**: Loss of natural groundwater replenishment sources like **ponds** and

Download Our Application Practices: Poor agricultural and land management practices exacerbate degradation.



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Why COP16 Matters

A Call to Action

COP16 is expected to declare a global emergency on land degradation and desertification, urging nations to prioritize action over dialogue.

Economic and Social Benefits

- **Land restoration** offers opportunities for **job creation**, **poverty reduction**, and **improved climate**
- Investment in **sustainable land management** can drive economic growth.

Global Cooperation

The summit emphasizes collaborative action among countries, non-state actors, and the private sector to tackle land degradation on a war footing.

COP16 in Riyadh represents a crucial step in addressing one of the most pressing challenges of our time. Through ambitious objectives and actionable strategies, it aims to ensure a sustainable future for both people and the planet.









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GS Paper 2 – Governance and Electoral Reforms

Strengthening the Election Commission of India: Challenges and Reforms

Context: The **Election Commission of India (ECI)** has faced increasing calls for strengthening its **independence** and enhancing its **role in electoral integrity**. These demands aim to bolster **voter trust** in the democratic process.

Constitutional Framework of the Election Commission:

A Constitutional Body

The **Election Commission of India (ECI)** was established on **January 25, 1950**, as a constitutional body to ensure **free and fair elections**.

Nationwide Jurisdiction

The ECI operates as a **common authority** for both the **Central** and **State Governments**, overseeing elections across the country.

Functions and Powers

The ECI supervises, directs, and controls elections for:

- Parliament
- State Legislatures
- President and Vice-President

Composition of the ECI

- The Chief Election Commissioner (CEC) heads the commission.
- Up to two Election Commissioners can be appointed (a provision added in 1989).
- All members have equal powers and responsibilities.

Appointment Process

The **President of India** appoints the CEC and Election Commissioners based on a **committee's recommendation**, comprising:

- The Prime Minister
- The Leader of the Opposition in Lok Sabha
- A **Union Minister** nominated by the Prime Minister

Tenure and Removal

- Members serve for six years or until they turn 65, whichever comes first.
- The CEC can only be removed in a manner akin to a Supreme Court judge, while other commissioners
 can be removed upon the CEC's recommendation.

Relevant Constitutional Articles

- **Article 324**: Grants the ECI the authority to supervise and control elections.
- **Article 325**: Prohibits discrimination based on **religion**, **race**, **caste**, **or sex** in electoral rolls.
- Article 326: Mandates adult suffrage for Lok Sabha and state legislature elections.
- **Article 329**: Prevents courts from intervening in electoral matters, except through election petitions.

Challenges in India's Electoral System

- **1.** Declining Voter Turnout: Caused by **lack of awareness**, logistical barriers, and **political disillusionment**.
- **2.** Electoral Violence: Threats and violence disrupt the electoral process, particularly in rural and conflict-prone areas.
- **3.** Media Manipulation and Misinformation: **Social media** and **deepfake videos** have been exploited to influence voter opinions.
- **4.** Gender Disparity: Women remain **underrepresented**, with only **13.6% of Lok Sabha members** being women in 2024.
- **5.** Influence of Black Money:Unregulated funding channels allow the use of **black money**, undermining electoral accountability.

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- **6.** Criminalization of Politics: **46% of elected members** in 2024 faced **criminal charges**, highlighting a lack of transparency.
- **7.** Political Defections: Despite the **Anti-Defection Law**, defections and **horse trading** continue to destabilize governments.
- **8.** Wealth Disparity Among Candidates: **93% of Lok Sabha members** in 2024 were crorepatis, making it hard for others to compete.

Reforms Needed for a Stronger ECI

- 1. Enhancing Funding Transparency
 - Introduce **state funding** for political parties, subject to independent audits.
 - Create a **National Election Fund** to ensure equitable distribution of donations.
- 2. Ensuring Impartial Appointments: Strengthen the independence of Election Commissioners to **maintain electoral integrity.**
- 3. Addressing Criminalization
 - Ban candidates facing **serious criminal charges** from contesting elections.
 - Improve **voter education** to ensure informed decision-making.
- 4. Reducing Wealth Disparities
 - Enforce stricter caps on candidate expenditure.
 - Mandate audits of political party spending.
- 5. Reforming the Anti-Defection Law
 - Amend the Tenth Schedule to curb defections effectively.
 - Impose **stricter penalties** for violations.
- 6. Increasing Voter Turnout: Conduct **awareness campaigns** to encourage participation and highlight the importance of voting.

The Way Forward

- Enact **comprehensive laws** to address funding, criminalization, and defection issues.
- Learn from global electoral systems for greater transparency and efficiency.
- Strengthen collaboration between the **executive**, **legislature**, **judiciary**, and ECI.
- Promote **voter education** on clean politics and democracy's value.

A robust and independent Election Commission is vital for upholding the **integrity of India's democracy** and ensuring elections remain free, fair, and transparent. By addressing these challenges and implementing reforms, India can strengthen public trust and fortify its democratic foundations.









High-Altitude Sickness: A Hidden Danger for Trekkers

GS Paper 3– Disaster Management and Preparedness

Context: The recent death of a trekker from Kerala due to High-Altitude Sickness (HAS) or Acute Mountain Sickness (AMS) while scaling a peak in Uttarakhand has highlighted the risks of trekking in mountainous regions.

Understanding High-Altitude Sickness:

What is High-Altitude Sickness?

High-Altitude Sickness occurs when people ascend rapidly to elevations

above 2,400 meters, without proper acclimatisation. It is triggered by reduced air pressure and low **oxygen levels** at higher altitudes, leading to **hypoxia**, or insufficient oxygen in the body's tissues.

Key Factors That Increase the Risk

- **Popular trekking routes** often exceed **3,000 meters**, where the risk of AMS is significantly higher.
- Insufficient time for **acclimatisation** leaves trekkers vulnerable to the effects of altitude.

Recognising Symptoms

Early Signs of AMS:

- Headaches
- Nausea
- Fatigue
- Shortness of breath

Severe Cases Can Lead To:

- **High Altitude Pulmonary Edema (HAPE):** Fluid buildup in the lungs causing breathlessness and potentially fatal respiratory issues.
- **High Altitude Cerebral Edema (HACE):** Swelling in the brain, leading to **confusion**, **hallucinations**, and even coma.

How Does the Body React at High Altitudes?

- The body compensates for low oxygen by **increasing breathing rates**, which may cause hyperventilation.
- To enhance oxygen transport, the body produces more **red blood cells**, thickening the blood and straining the heart.

Treatment and Prevention Strategies:

Immediate Actions for AMS:

- 1. **Descent:** The fastest and most effective treatment is moving to a lower altitude.
- 2. Oxygen Support: Supplemental oxygen or a portable hyperbaric chamber can help alleviate symptoms.

Medical Interventions:

- **Acetazolamide**: Aids acclimatisation and reduces symptoms of AMS.
- **Dexamethasone**: Helps manage swelling in severe cases like HACE.

Precautions for Trekkers:

- Ascend gradually, allowing the body sufficient time to **acclimatise**.
- Stay hydrated and avoid alcohol, which can exacerbate symptoms.
- Recognise early signs of AMS and avoid pushing further if symptoms worsen.

High-Altitude Sickness is preventable and treatable with proper preparation and awareness. Trekkers must prioritise **safety over ambition** when exploring mountainous terrains.











High Seas Treaty: A Milestone for Ocean Conservation

GS Paper 3 – Environment and Ecology

a milestone unlike any other.

Context: India has recently signed the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement, also known as the High Seas Treaty, during the **United Nations General Assembly 2024** in New York.

What Are the High Seas?

Defining the High Seas

The high seas refer to international waters that lie beyond the jurisdiction of any nation. These are areas:

- Beyond **12 nautical miles** of territorial waters.
- Beyond **200 nautical miles** of Exclusive Economic Zones (EEZ).

Global Importance

- High seas cover **65% of the ocean's surface** and make up **43% of the Earth's total area**.
- They are part of the **global commons**, belonging to no nation but shared by all, requiring collective responsibility for their conservation.

Significance of the High Seas

- 1. **Food Security**: The ocean is the primary source of protein for **3 billion people worldwide**.
- 2. Economic Vitality:
 - Accounts for **90% of global freight transport**.
 - Supports industries like fishing and submarine communications.
- 3. **Renewable Energy**: Potential for clean energy generation from waves and currents.
- 4. Biodiversity Hotspot: Home to between 500,000 and 100 million species, with only 250,000 species recorded.
- 5. Climate Regulation:
 - o Produces over **50% of the Earth's oxygen**.
 - Absorbs 25% of carbon dioxide emissions and stores over 90% of excess heat from global warming.

About the High Seas Treaty

Overview

The **High Seas Treaty** is a **legally binding agreement** aimed at regulating human activities in international waters to ensure **sustainable resource use** and **biodiversity protection**.

Key Features

- **Adoption**: Agreement on **biodiversity beyond national jurisdiction** (BBNJ).
- **Signatories**: 105 countries, with 14 having ratified it as of now.
- Legality: Comes into effect 120 days after 60 countries ratify it.
- **India's Role**: Signed but not yet ratified.

Objectives of the Treaty

- 1. **Marine Protected Areas (MPAs)**: Establish and regulate MPAs to protect fragile ecosystems.
- 2. Sustainable Resource Use: Ensure equitable sharing of benefits from marine genetic resources (MGRs).
- 3. **Environmental Impact Assessments (EIAs)**: Mandate EIAs for major activities affecting the oceans.
- 4. **Capacity Building**: Support technology transfer and skill development in developing nations.

Why Is the High Seas Treaty Essential?

Urgent Need for Protection

Only 1.44% of high seas are currently protected, while the UN COP15 Biodiversity Conference has set a target of protecting 30% of the planet's lands and oceans by 2030.

Global Challenges

Overexploitation and Pollution:

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 Overfishing and the dumping of 17 million tonnes of plastic annually are threatening marine ecosystems.

Climate Impact:

o Addressing ocean acidification, habitat destruction, and biodiversity loss.

How Does It Align with India's Interests?

Maritime Policies

• Promotes **Environmental Impact Assessments (EIAs)** and aligns with India's **Blue Economy** initiatives.

Strategic Benefits: Strengthens India's position in the Indo-Pacific under the **SAGAR (Security and Growth for All in the Region)** initiative.

Challenges Ahead

Marine Protected Areas: Weak enforcement mechanisms and low protection levels make achieving the **30% restoration target** by 2030 difficult.

Marine Genetic Resources

- Risk of monopolization by technologically advanced nations.
- Intellectual property disputes over benefit-sharing.

Implementation Barriers

- High costs of **EIAs**.
- Limited resources and expertise in Small Island Developing States (SIDS) and landlocked countries.
- Geopolitical tensions hindering global cooperation.

What Lies Ahead?

Path to Implementation

- 1. Ratification: At least 60 countries must ratify the treaty for it to come into effect.
- 2. Institutional Mechanisms:
 - Establish monitoring, compliance, and enforcement frameworks.
- 3. Support for Developing Nations:
 - Provide resources, financial aid, and technology transfer to facilitate treaty compliance.

Global Collaboration

• Enhanced cooperation is essential to protect the **64% of the ocean categorized as global commons**, ensuring sustainable use for future generations.

The **High Seas Treaty** represents a landmark moment in ocean conservation. By bridging global cooperation and sustainability, it offers hope for protecting one of Earth's most vital and vulnerable ecosystems. Bottom of Form











Understanding AUKUS: The Trilateral Security Pact

S Paper 2 – International Relations

Context: China's ambassador to New Zealand has cautioned that New **Zealand joining AUKUS** could negatively impact its relationship with China.

What Is AUKUS?

Introduction:

AUKUS is a **trilateral security partnership** involving the **United** States, United Kingdom, and Australia, established in 2021. It focuses on **technology sharing** to bolster security in the **Indo-Pacific** region.



The partnership is widely regarded as a **strategic response to China's growing influence** and activities in this geopolitically crucial area.

Purpose and Goals:

- **Strengthening Defense Interests**: AUKUS builds upon the longstanding bilateral relationships among the three countries to enhance their collective defense capabilities.
- **Deterring Aggression:** A key goal is to act as a **deterrent against Chinese assertiveness** in the Indo-Pacific region.

Key Pillars of AUKUS:

Pillar 1: Nuclear Submarine Fleet for Australia

- Supports Australia in acquiring its first conventionally armed, nuclear-powered submarines (SSNs).
- These submarines are not armed with nuclear weapons, adhering to Australia's commitments under the Nuclear Non-Proliferation Treaty (NPT).
- The initiative will make Australia the seventh country globally to possess nuclear-powered submarines.

Pillar 2: Advanced Military Capabilities:

Focuses on collaboration in eight critical defense areas:

- 1. Artificial Intelligence (AI)
- 2. Quantum Technologies
- 3. Cybersecurity
- 4. Innovation and Information Sharing
- 5. Undersea Warfare
- 6. Hypersonic and Counter-Hypersonic Systems
- 7. Electronic Warfare

Submarine Component: A Key Highlight

Development and Design:

- Australia will acquire eight nuclear-powered attack submarines, known as SSN-AUKUS.
- These submarines will feature a **British design** with **American technology** and combat systems.

Strategic Advantages:

Nuclear-powered submarines provide:

- **Extended Range**: Greater operational distance without refueling.
- **Endurance**: Ability to remain submerged for extended periods.
- **Stealth**: Enhanced ability to evade detection.

Global Impact:

- This partnership makes Australia the second country, after the UK, to receive U.S. nuclear submarine technology.
- AUKUS significantly bolsters Australia's **undersea capabilities** in the Indo-Pacific.









AUKUS and Nuclear Non-Proliferation:

The alliance has emphasized that the **new submarines will not carry nuclear weapons**, ensuring compliance with the **NPT**, which prohibits Australia from acquiring or deploying nuclear weapons.

Why Is AUKUS Significant?

- **Indo-Pacific Security**: Strengthens regional stability and counters **geopolitical challenges**, particularly those posed by China's growing assertiveness.
- **Technology Sharing**: Enhances innovation and defense capabilities through collaboration in advanced technologies.
- **Strategic Partnerships**: Reinforces the defense ties among the U.S., UK, and Australia, strengthening alliances in the region.

Controversy and Global Implications:

- **China's Concerns**: Beijing views AUKUS as a threat to its interests and has expressed strong opposition.
- **Geopolitical Shifts**: The pact signals a growing emphasis on multilateral alliances to maintain **regional balance of power** in the Indo-Pacific.

The **AUKUS** agreement represents a critical step toward reinforcing security and technological innovation in the Indo-Pacific. While it offers strategic advantages to its members, it also reshapes the global defense landscape, making it a focal point in international relations.







GS Paper 2 – Governance and E-Governance Initiatives



6

Eklavya Digital Platform: A New Era in Military Education

Context: The Indian Army recently launched the **Eklavya Digital Platform**, an **online learning initiative** designed to modernize training and education for its officers.

What Is the Eklavya Digital Platform?

Development and Hosting

- Created under the guidance of the **Army Training Command** with the **Army War College** as the sponsoring agency.
- **BISAG-N** (Bhaskaracharya National Institute of Space Applications and Geoinformatics), Gandhinagar, developed the platform, supported by the **Directorate General of Information Systems**.
- Hosted on the **Army Data Network** with a **scalable architecture** that allows seamless integration of multiple Indian Army training establishments and a vast range of courses.

Significance:

The platform supports the Indian Army's vision of a "Decade of Transformation" and aligns with the 2024 theme: "Year of Technology Absorption."

Features of the Eklavya Platform

Course Categories:

- 1. Pre-Course Preparatory Capsules:
 - Offers study material for all offline courses conducted at Category 'A' training establishments.
 - Focuses on basic concepts, allowing physical courses to concentrate on advanced and application-based content.
- 2. Assignment-Specific Courses:
 - Tailored for specific roles or appointments, enabling officers to gain domain specialization in their chosen fields.
- 3. Professional Development Suite:
 - o Includes courses on Strategy, Operational Art, Leadership, Organisational Behaviour, Finance, Emerging Technology, and more.

Knowledge Highway

• A **searchable repository** of journals, research papers, and articles, offering a **single-window resource** for in-depth knowledge.

Flexibility in Learning

 Officers can register for multiple courses simultaneously, encouraging continuous professional growth.

Impact of Eklavya:

Modernizing Military Education

- Facilitates **continuous professional military education** by offering diverse and specialized courses.
- Enhances the **quality of physical training** by shifting foundational learning online.

Specialization and Skill Development

 Prepares officers for specialist appointments and aids in domain specialization, improving operational efficiency.

Resource Optimization:

• Reduces the load on physical training infrastructure while enriching course content.

Conclusion

The **Eklavya Digital Platform** is a milestone in the Indian Army's journey toward **digital transformation** and **modern military education**. By integrating technology with learning, the platform equips officers with the skills and knowledge to address the **dynamic challenges of modern warfare** effectively.

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