Date –09 April 2024

BALANCING RENEWABLE ENERGY AND GREAT INDIAN BUSTARD CONSERVATION

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "GREAT INDIAN BUSTARD AND POWER LINES". THIS TOPIC IS RELEVANT IN THE "POLITY AND GOVERNANCE" SECTION OF THE UPSC CSE EXAM.

WHY IN THE NEWS?

In a notable decision, the Supreme Court has broadened the interpretation of Articles 14 and 21 to encompass protection against the detrimental impacts of climate change. The judgement was given on a petition by environmentalists to protect the Great Indian Bustard.

MORE ABOUT THE CASE

The Supreme Court of India recently navigated a complex case concerning the critically endangered Great Indian Bustard (GIB). The bird, found in the arid grasslands of Rajasthan and Gujarat, faces numerous threats, including collisions with overhead power lines.

APRIL 2021 VERDICT OF SUPREME COURT

- In a landmark verdict in April 2021, the Supreme Court prioritised the GIB's survival. Recognising the devastating impact of power lines on these birds, the court imposed restrictions on their construction across a vast area (approximately 99,000 square kilometres) in the GIB's primary habitat.
- This bold decision aimed to create safer airspace for the birds and encourage alternative transmission solutions. The court even suggested converting existing overhead lines to underground cables, a more bird-friendly option but also a significantly more expensive and technically challenging undertaking.

THREATS FROM POWER LINES

- The Great Indian Bustard (GIB) faces a significant threat from power lines criss-crossing its arid grassland habitat in India. A 2020 study by the Wildlife Institute of India revealed a grim statistic – power lines claim the lives of an estimated 84,000 birds of various species annually within and around the Desert National Park in Rajasthan.
- The GIB is particularly susceptible to power line collisions due to its unique physical characteristics. Unlike some birds with a broad field of vision, the GIB, along with other raptors and bustards, has extensive blind spots above its head.

- This limited frontal vision makes it difficult for them to detect oncoming power lines from a distance.
- Additionally, their large size and weight hinder their ability to manoeuvre quickly and avoid collisions at close quarters. These factors combine to make power lines a deadly threat to the already endangered GIB population.

CONCERNS OVER THE IMPACT ON ACHIEVING CLEAN ENERGY GOALS

- The Ministry of Environment, Forests and Climate Change, along with the Power and New and Renewable Energy Ministries, challenged the court's order. They argued that the restrictions placed a significant burden on India's clean energy goals.
- Many of the nation's major solar and wind power plants, crucial for reducing the country's carbon footprint, are located within this designated area.
- Additionally, transitioning existing overhead lines to underground cables was deemed technically infeasible in many locations due to factors like complex terrain and soil conditions.

MODIFICATION IN 2021 VERDICT OF SC

- Acknowledging the practical difficulties highlighted by the government, including technical limitations, land acquisition challenges, and high costs associated with underground cables, the Supreme Court modified its original order in March 2024.
- The court's revised approach recognises the importance of climate change action and the need for renewable energy development. It emphasises the need to find a balance that ensures the GIB's conservation alongside broader environmental protection.
- This likely involves exploring alternative solutions like carefully planned rerouting of power lines, implementing bird diverters on existing lines, and investing in research and development of new technologies that minimise bird collisions.
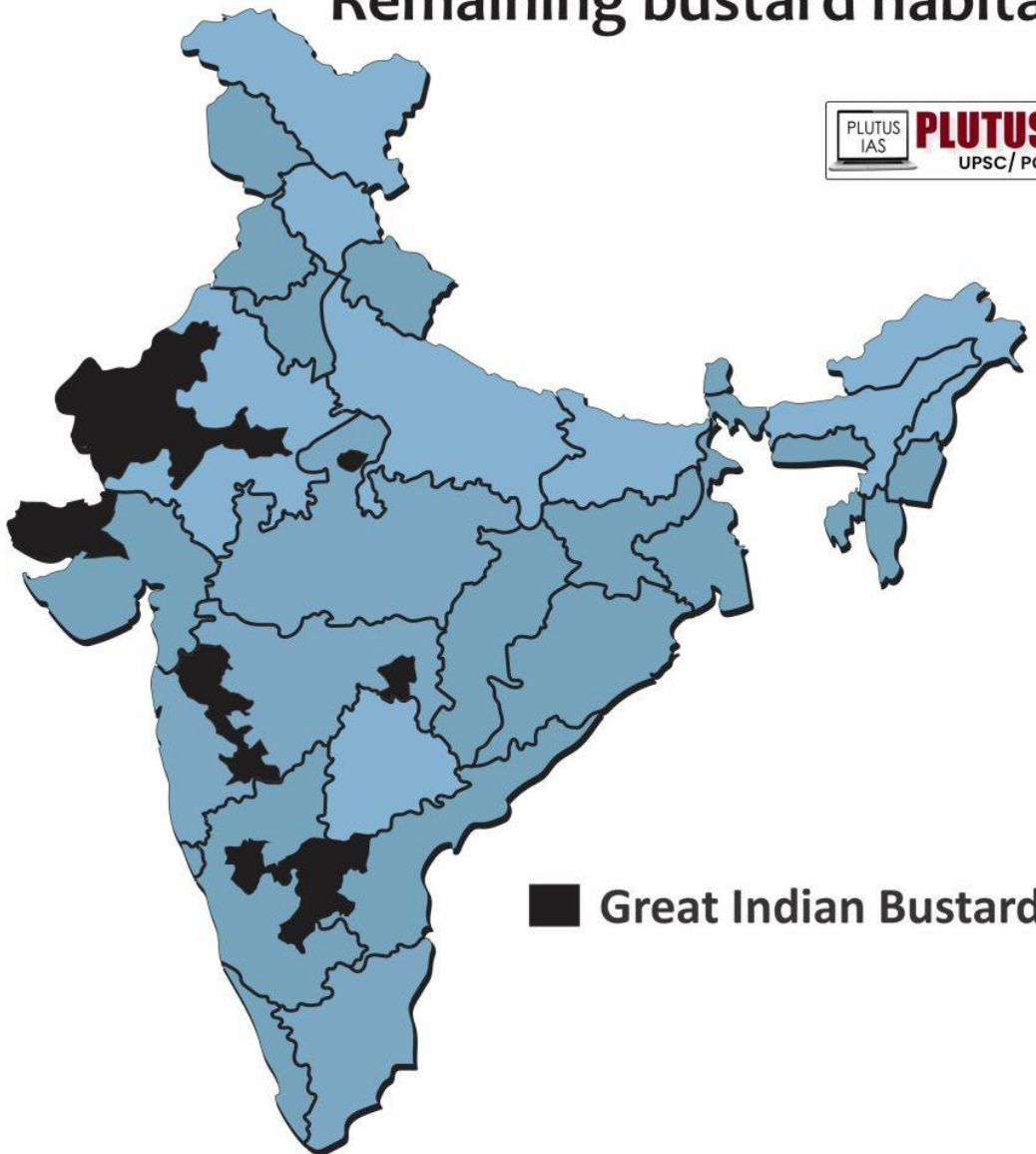
ABOUT GREAT INDIAN BUSTARD

- **Habitat:** The GIB thrives in open, dry, and semi-dry grasslands. These areas are typically dotted with scattered bushes and patches of scrub, providing them with a mix of open space for foraging and some cover for nesting and roosting.
- **Diet:** These adaptable birds are omnivores, meaning they consume both plant and animal matter. Their diet includes insects, grass seeds, berries, small rodents, and reptiles. In areas bordering cultivated lands, they may occasionally feed on exposed groundnuts, millets, and legume pods.
- **Distinctive Appearance:** The GIB's striking appearance makes it easy to identify. A prominent black crown adorns their forehead, contrasting beautifully with their pale neck and head. Males boast a larger crown compared to females, and their plumage colouration further differentiates the sexes.
- **Conservation Status:**

IUCN: Critically Endangered

CITES: Appendix-I

WPA 1972: Schedule-I

Remaining bustard habitats

Great Indian Bustard

HIGHLIGHTS OF THE VERDICT

- The court acknowledged challenges with underground cables, including limited capacity, higher transmission losses, and the need for legal frameworks for land acquisition.
- A 9-member committee of experts was formed to assess the feasibility of undergrounding power lines in specific areas.
- The court recognised India's significant clean energy targets and the importance of transitioning from fossil fuels for environmental, economic, and security reasons.
- The court highlighted the social, economic, and environmental benefits of solar power, emphasising its role in energy security, combating air pollution, and conserving water resources.
- The judgement highlighted the link between climate change and human rights, emphasising states' responsibility to address climate impacts through the lens of rights like a clean environment.
- **Fundamental Rights and Climate Change:**

1. **Article 21** guarantees the fundamental rights to life and personal liberty, while **Article 14** ensures equality before the law and equal protection of the laws for all individuals. **These constitutional provisions serve as significant foundations for the right to a healthy environment and protection against the adverse impacts of climate change.**
2. The realisation of the right to life is contingent upon a clean and stable environment free from the disruptions caused by climate change. **Factors such as air pollution, changes in disease vectors, increasing temperatures, and droughts directly affect public health, which falls under the purview of the right to life as stipulated in Article 21.**
3. Furthermore, the **inability of marginalised communities to adapt to or mitigate the effects of climate change** constitutes a **violation of both the right to life (Article 21) and the right to equality (Article 14).** These underserved populations face disproportionate challenges in safeguarding their health and well-being in the face of environmental degradation and climate-related hazards.

CONCLUSION:

The Supreme Court's judgement in this case highlights the complex challenges at the intersection of environmental protection and sustainable development. Striking a balance between these goals requires careful consideration of ecological needs, technological feasibility, and economic realities. Moving forward, collaborative efforts between government agencies, energy companies, conservation groups, and scientific experts will be crucial in finding innovative solutions that safeguard the GIB and support India's clean energy transition.

PRELIMS PRACTISE QUESTIONS

Q1. With reference to India's Desert National Park, which of the following statements is correct?
1. It is spread over two districts.
2. There is no human habitation inside the Park.
3. It is one of the natural habitats of the Great Indian Bustard.

Select the correct answer using the code given below:
(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Answer: C

Q2. The concept of "Public Trust Doctrine" in environmental law implies that natural resources are:
(a) Owned by the government
(b) Owned by private entities
(c) Owned collectively by citizens and the government and must be protected for the common good
(d) Owned by multinational corporations

Answer: C

Q3. In which case did the Supreme Court of India recognise the "polluter pays" principle?
(a) MC Mehta v. Union of India
(b) Indra Sawhney v. Union of India

(c) Olga Tellis v. Bombay Municipal Corporation
(d) Vishaka v. State of Rajasthan

Answer: A

MAINS PRACTISE QUESTIONS

Q1. How can governments, NGOs, and local communities collaborate to leverage traditional knowledge for biodiversity conservation and sustainable development?

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NEED FOR REGULATION OF ARTIFICIAL INTELLIGENCE

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "RECENT REGULATORY FRAMEWORK ON ARTIFICIAL INTELLIGENCE". THIS TOPIC IS RELEVANT IN THE "SCIENCE AND TECHNOLOGY" SECTION OF THE UPSC CSE EXAM.

WHY IN THE NEWS?

The UN general assembly has taken a significant step by unanimously adopting the first global resolution on artificial intelligence (AI).The resolution, titled "Seizing the opportunities of safe, secure, and trustworthy artificial intelligence systems for sustainable development," aims at bridging the gap in AI regulation for safe, secure use in interest of global good.

WHY IS THERE A NEED TO REGULATE AI?

Bias in algorithm- AI systems are trained on big data which may inherit biases of the creators. For example, An AI system may be better for some demographics than others.

Job losses- every technology has some impact on the livelihood of the people, AI is no different. AI will proliferate automation technology which will lead to a large number of job losses in multiple sectors.

Privacy issues- AI systems either intentionally or unintentionally captures data of the people, sometimes without the consent which raises privacy concerns.

Manipulative content creation- such as deepfakes which can be used to serve narrow interests of certain sections of society.For example, recently there was a deep fake video of a famous actress that got viral which raised attention of the potential misuse.

Ensuring transparency and accountability-It is important to hold companies working on these AI tools accountable for their actions.

REGULATORY FRAMEWORK IN SOME COUNTRIES

The EU's approach

The EU uses a risk-based approach, That categorizes systems into four categories, namely unacceptable, high, limited, and minimal risks, prescribing guidelines for each.
The Act prescribes a ban on applications that risk citizens' rights, like manipulation of human behavior, emotion recognition, mass surveillance etc.
It recognizes two things: acknowledging the compliance burden placed on business enterprises and start-ups, and regulating the much-deliberated Generative AI systems such as ChatGPT.

China's stand on AI

Chinese regulatory framework focuses on three subjects content moderation- which includes identification of content generated through any AI system personal data protection- with a specific focus on the need to procure users' consent before accessing and processing their data algorithmic governance,-with a focus on security and ethics while developing and running algorithms over any gathered dataset.

The U.K.'s framework

The U.K, has a principled and context-based approach

The approach requires mandatory consultations with regulatory bodies to know regulatory loopholes if any. Thus , the U.K. has adopted a decentralized approach. There is a mechanism for consultation which is a bit softer than the Chinese and EU approach.

WHAT IS ARTIFICIAL INTELLIGENCE?

Artificial Intelligence (AI) refers to the field of computer science focused on creating systems that can perform tasks typically requiring human intelligence. This technology aims to replicate human-like cognitive abilities such as problem-solving, learning, decision-making, and pattern recognition. Today, AI finds applications across diverse industries, ranging from finance to healthcare, due to its capability to analyze vast amounts of data and make insightful decisions.

The evolution of AI has surpassed its original conception, driven by significant advancements in data processing, computational power, and algorithmic sophistication.

These improvements have expanded AI's utility and enabled its integration into various fields.

The applications of AI are extensive and impactful:

- In the realm of e-commerce, AI is employed to enhance user experience through personalized shopping recommendations and AI-powered virtual assistants like chatbots.
- Facial recognition technology, implemented in devices such as mobile phones and computers, utilizes AI algorithms for authentication, security, and user convenience.
- Automobile manufacturers like Audi, Toyota, and Tesla leverage AI to develop self-driving vehicles capable of navigating diverse environments and detecting potential hazards to prevent accidents.
- AI systems, integrated into platforms like Uber and logistics companies, optimize transportation routes, analyze traffic patterns, and enhance operational efficiency.
- In education, AI facilitates personalized learning experiences by monitoring student progress, adapting lesson plans, and providing tailored study materials and reminders.
- In agriculture, AI technologies such as computer vision and machine learning help identify soil defects, nutrient deficiencies, and crop diseases, enabling farmers to optimize yields and resource usage.

Numerous AI startups and private companies contribute to the advancement of this technology, including Tata Elxsi, Bosch, Happiest Mind, Zensar Technologies, and Oracle. These entities drive innovation across industries, developing AI-driven solutions to address complex challenges and unlock new opportunities for growth and efficiency.

WAY FORWARD FOR INDIA

India has one of the largest populations of internet users in the world which makes the country more vulnerable to such threats posed by AI. Also , considering the potential impact of the livelihoods of people it is crucial for the government to formulate comprehensive regulations which keep in mind different stakeholders.

PRELIMS QUESTION

Q . WHICH OF THE FOLLOWING AI TOOLS CAN BE USED FOR CREATION OF MOVIES AND DOCUMENTARIES BY A COMMON MAN.
1.Dall-e
2.Sora
3.Chatgpt

4.gemini

MAINS QUESTION

Highlight the benefits of Artificial Intelligence and also point out some challenges associated to realize its full potential.

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