



28 October 2024

Use of IVF to conservation of Great Indian bustard

Context: A chick of the critically endangered Great Indian Bustard (GIB) has been born through Artificial Insemination (AI). The birth occurred at the Sudasari Great Indian Bustard Breeding Centre in Jaisalmer, Rajasthan.

- This achievement offers renewed hope for the species, which faces extinction due to habitat loss and environmental threats.
- The chick was born under the Species Recovery Programme at the Desert National Park in Rajasthan, which is home to the last remaining wild population of GIBs.

The AI Breakthrough:

- A Great Indian Bustard chick was successfully born through IVE, a first for the species, giving a major boost to ongoing conservation efforts aimed at saving this critically endangered bird. Extensive training of a male GIB named Suda was conducted to prepare for sperm collection without natural mating.
- Sperm was collected and successfully inseminated into a female GIB named Tony on September 20. Tony laid an egg that hatched on October 16, marking a crucial milestone for population recovery.

Significance:

- The breakthrough allows for the potential creation of a sperm bank to enhance conservation efforts.
- With fewer than 150 GIBs remaining in the wild, primarily in Rajasthan, genetic diversity is crucial.

Conservation Efforts in Jaisalmer:

- Sudasari breeding centre was established in 2016 as part of the Union Environment Ministry's Bustard Recovery Program.
- Focus is on captive breeding and creating a sustainable environment for future releases into the wild.

About the Bustard Recovery Project:

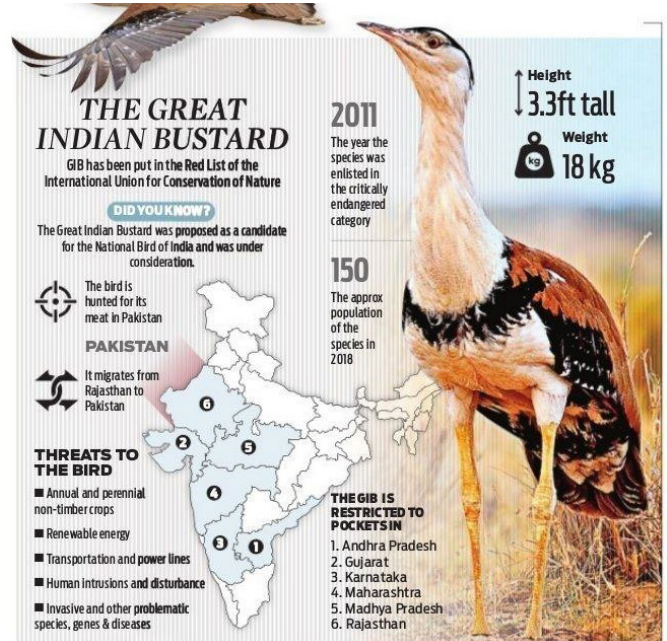
- Launched for an initial period of five years (2016-2021), with an extension granted from 2021 to 2024.

Objectives:

- Conservation breeding of the Great Indian Bustard (GIB).
- Capacity building and advocacy to raise awareness

among stakeholders and decision-makers about bustard conservation.

- Incentivizing land uses that are friendly to the bustard.



About the Great Indian Bustard (Godawan):

- **Habitat:** Primarily found in Rajasthan and Gujarat, with small populations in Maharashtra, Karnataka, and Andhra Pradesh.

Conservation Status:

- **IUCN Status:** Critically Endangered.
- **Legal Protection:** Listed under Schedule I of the Wildlife Protection Act, 1972, and included in Appendix I of CITES.
- **Species:** A grassland bird endemic to the Indian subcontinent.
- **Population:** Fewer than 150 GIBs remain in the wild, almost exclusively restricted to India.

1,000 Crore Fund for Space Start-Ups

Context: The Union Cabinet has recently approved a significant initiative to bolster India's space sector by establishing a Rs. 1,000 crore venture capital fund. This fund aims to support 30 to 35 space start-ups over the next five

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years, enhancing India's competitiveness in the global space market.

Key Features of the Fund:

Targeted Support for Growth

- **Financial Allocation:** Each selected start-up will receive between Rs. 10 to Rs. 60 crore, based on their development stage and potential national impact.
- **Objective:** Tailored support to address specific needs of early-stage companies, facilitating scaling and innovation.

Implementation Plan

- **Funding Schedule:**
 - » 150 crore in the first operational year (2025-26).
 - » 250 crore for the next three years.
 - » 100 crore in the final year.
- **Management:** Professional fund managers will oversee the fund, adhering to SEBI's structures for alternative investment funds.



Venture Capital Fund for Space Sector under aegis of IN-SPaCe*

Proposed fund: ₹1,000 crore

Deployment period: Up to 5 years

The infographic features a rocket launch against a starry space background. The rocket is white with orange and blue accents, and the Indian flag is visible on its side. The text is in a mix of pink, purple, and yellow colors.

Economic Impact of this fund:

- **Job Generation:** The fund is expected to create thousands of direct and indirect jobs.
- **Manufacturing and Supply Chains:** Enhances manufacturing capabilities and establishes robust supply chains.
- **Skilled Workforce:** Fosters the development of trained professionals in the space sector.
- **Innovation:** Drives advancements in satellite and launch

vehicle technologies.

Supporting Factors for space sector:

Ecosystem Growth:

- Rapid increase in space start-ups, with projections of nearly 200 by 2024, up from just one in 2022.
- Reflects significant reforms and a supportive innovation environment.

Government Support:

- Proactive governmental measures, including the new venture fund and the Indian Space Policy 2023, which opens avenues for private participation.
- The abolishment of the 31% angel tax will ease financial burdens on startups, encouraging more investment.
- Reductions in corporate tax for foreign companies are designed to attract international investments into the Indian startup ecosystem.
- Raising the MUDRA loan limit from 10 lakh to 20 lakh provides more financial resources for startups to utilize in their growth and development.

Investment Surge:

- In 2023, investments in Indian space start-ups reached approximately \$124.7 million, indicating growing investor confidence in the sector.

FDI Provision:

- Allowance of 100% Foreign Direct Investment (FDI) in the space sector has attracted new initiatives and facilitated easier access to capital.

Key Players:

Prominent companies include:

- **Pixxel:** Innovating in satellite technologies.
- **Dhruva Space:** Focused on satellite deployment.
- **Skyroot Aerospace:** Developed Vikram-S, India's first privately developed rocket.

Space Economy:

- Currently valued at approximately USD 8.4 billion (6,700 crore).
- Projected increase in India's share of the global space economy from 2% in 2021 to 8% by 2030, with a target of 15% by 2047.

India's Emissions Rise by 6.1% in 2023

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Context: Recently, The Emissions Gap Report 2024, published by the UN Environment Programme, sheds light on the current state of global greenhouse gas emissions and highlights urgent actions needed to address the climate crisis.

Key findings:

- **Global Emissions Surge:**
 - » Global greenhouse gas emissions reached a record high in 2023, increasing by 1.3% compared to the previous year.
- **India's contribution:**
 - » India's greenhouse gas emissions experienced a notable increase of 6.1% in 2023 compared to the previous year, resulting in a contribution of 8% to the global total emissions. This rise in emissions underscores the pressing energy demands of a rapidly growing population.
 - » Despite the upward trend in annual emissions, India's historical contribution to global CO₂ emissions remains comparatively low at approximately 3%.
 - » The rise in emissions reflects the energy needs of India, now the world's most populous nation, with per capita emissions at 2.9 tons of CO₂ equivalent (tCO₂e), well below the global average of 6.6 tCO₂e.
- **Global Emission Disparities:** The report highlights significant inequalities in emissions, noting that G20 countries (excluding the African Union) collectively account for 77% of global greenhouse gas emissions.
- **Peaking Emissions:** Countries like India, China, and others have not yet peaked in their emissions. Rapid reduction efforts post-peak are essential for long-term climate goals.
- **Historical Context:** While India's emissions are increasing, it has contributed only 3% to global CO₂ emissions historically, compared to 20% from the United States. This distinction underscores the complexities of global climate responsibility.
- **Urgency for Action:** The report stresses the need for immediate action to bridge the gap between climate pledges and actual progress, as global emissions reached a record high of 57.1 gigatons of CO₂ equivalent in 2023.
- **Future Targets:** To limit global warming to 1.5 degrees Celsius, emissions must decrease by 42% by 2030. Even for a 2-degree limit, a 28% reduction is necessary.
- **Sector Contributions:** The power sector remains the largest emitter, followed by transportation, agriculture,

and industry. International aviation emissions surged by nearly 20% as travel rebounded post-pandemic.

- **Potential Solutions:** The report identifies renewable energy, particularly solar and wind, as crucial for emissions reduction, potentially contributing 27% of total reductions by 2030.

Ambitious Cuts Required:

- Nations must commit to cutting greenhouse gas emissions by 42% by 2030 and 57% by 2035 to stay on track for the 1.5°C target.
- Without these increases in ambition, the world is projected to warm by 2.6-3.1°C this century, leading to severe consequences for people, ecosystems, and economies.

About the report:

- The Emissions Gap Report is a crucial document that highlights the gap between where global greenhouse gas emissions are heading and where they need to be to limit global warming to 1.5°C, as agreed upon in the Paris Agreement.

World Polio Day

Context: World Polio Day, observed annually on October 24, raises awareness about the critical importance of polio vaccination. India achieved a major health milestone in 2014 when it was certified polio-free, but recent cases—such as a vaccine-derived poliovirus case in Meghalaya in 2024—highlight the need for constant vigilance.

- Globally, polio's resurgence, as seen in a recent case in Gaza after 25 years, reinforces the importance of continuous surveillance. These recent cases emphasize the vital role of Acute Flaccid Paralysis (AFP) surveillance in India's strategy to prevent a polio resurgence.

About Poliomyelitis

- Polio, or poliomyelitis, primarily affects children under five years old. The poliovirus spreads through contaminated water or food and can cause severe neurological complications, including paralysis.
- While most infections are asymptomatic, the virus can invade the nervous system in a small percentage of cases, resulting in irreversible paralysis, particularly in the legs.
- Despite being eradicated in many regions, polio remains

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endemic in a few countries, notably Pakistan and Afghanistan. Global vaccination efforts have significantly reduced the number of polio cases, with a more than 99% decline in incidence since the late 1980s.

Types of Polio Vaccines:

- **Inactivated Poliovirus Vaccine (IPV):** Developed by Dr. Jonas Salk in 1955, IPV contains killed virus particles and is administered via injection. It provides strong immunity and is safe for all populations, including those with weakened immune systems.
- **Oral Poliovirus Vaccine (OPV):** Created by Dr. Albert Sabin in the early 1960s, OPV contains weakened live virus and is taken orally. It is easier to administer, particularly in mass immunization campaigns, and offers herd immunity by allowing the weakened virus to spread within communities. However, there is a slight risk of vaccine-associated paralytic poliovirus (VAPP).

What is Acute Flaccid Paralysis (AFP)?

- Acute Flaccid Paralysis, or AFP, is sudden weakness or paralysis in one or more limbs, occurring without any trauma. Poliovirus is a primary concern as it can lead to irreversible paralysis or even death.
- In India, every AFP case in children under 15 is thoroughly investigated to determine if the poliovirus or other conditions are involved.
- Other potential causes of AFP include Guillain-Barré syndrome, transverse myelitis, encephalitis, and spinal

cord injuries. AFP presents with limp, weak limbs often without pain, which helps distinguish it from trauma-related paralysis. Investigating AFP cases early allows health authorities to detect poliovirus quickly, ensuring timely intervention.

Strategies for Addressing Challenges:

- **Enhancing Vaccination Coverage:** Ensuring that all children receive their polio vaccine doses is crucial. Public awareness campaigns can help counter misinformation and improve vaccination rates.
- **Strengthening Surveillance Systems:** Robust monitoring systems for early detection and rapid response to outbreaks are vital. Environmental surveillance can also aid in tracking the virus.
- **Addressing Socio-Cultural Barriers:** Engaging communities in dialogue about vaccination benefits can help overcome cultural resistance, with collaboration from community leaders.
- **International Collaboration:** Coordinated efforts across borders are necessary, as polio eradication requires a unified approach. Global partnerships should focus on resource sharing and best practices.
- **Investing in Research and Development:** Continued investment in vaccine research is critical for developing improved formulations and delivery methods.

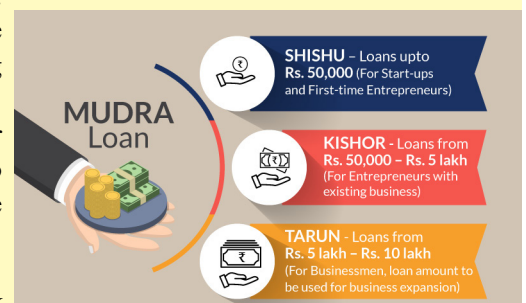
Power Packed News

Pradhan Mantri Mudra Yojana (PMMY)

- The government has increased the Mudra loan limit under the Pradhan Mantri Mudra Yojana (PMMY) to ₹20 lakh from ₹10 lakh, introducing a new 'Tarun Plus' category to promote entrepreneurship. This enhancement aims to further the Mudra Scheme's goal of funding the unfunded, particularly benefiting emerging entrepreneurs by facilitating their growth and expansion.
- Finance Minister Nirmala Sitharaman announced this change in her July 2024 Union Budget speech, specifying that the increase applies to entrepreneurs who have successfully repaid previous loans under the 'Tarun' category.

About PMMY:

- Launched on April 8, 2015, by Prime Minister Narendra Modi, PMMY aims to provide easy, collateral-free micro-credit of up to ₹10 lakh to non-corporate, non-farm small and micro-entrepreneurs for income-generating activities.



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- Loans are issued by member lending institutions, including banks, non-banking financial companies, microfinance institutions, and other financial intermediaries.
- Under the existing scheme, banks provide collateral-free loans in three categories:
- Shishu: up to ₹50,000
- Kishore: between ₹50,000 and ₹5 lakh
- Tarun: up to ₹10 lakh

Indian Football Team Advances to 125th in Latest FIFA Rankings

- The Indian men's football team has achieved a significant milestone in the latest FIFA rankings, published on October 24, 2024, as they rise to the 125th position. This boost follows their recent 1-1 draw against Vietnam in an international friendly match.
- Under the guidance of new coach Manolo Márquez, the team is still aiming for its first win, having recorded one loss and two draws since his arrival. Despite this, their performances have resulted in an increase of +0.26 points, bringing their total to 1133.78 points.
- In the Asian Football Confederation (AFC) rankings, India has also moved up one spot to 22nd place. The global football landscape remains led by Argentina, which holds the top rank with 1883.5 points, while France, Spain, England, and Brazil round out the top five teams.

Venezuelan Opposition Leaders Awarded Europe's Sakharov Prize

- The European Parliament has awarded its annual Sakharov Prize for Freedom of Thought to Venezuelan opposition leaders María Corina Machado and Edmundo González. This prestigious award recognizes their efforts to represent the Venezuelan people's struggle for freedom and democracy.
- Machado and González have been at the forefront of the fight for a peaceful, fair, and independent transfer of power in Venezuela.
- In 2023, the award was given to Mahsa Amini and the "Women, Life, Freedom" movement in Iran.
- The Sakharov Prize, established in 1988, honors individuals and organizations dedicated to defending human rights and democracy. The prize is named after Soviet physicist Andrei Sakharov, a prominent advocate for civil liberties and freedoms.



MoU between ISRO and DBT

- Recently, The Indian Space Research Organisation (ISRO) and the Department of Biotechnology (DBT) have signed a memorandum of understanding to collaborate on space biotechnology. This partnership aims to explore various areas, including microgravity experiments and biomanufacturing, which could be vital for future human space missions.
- Key areas of research will include investigating how supplements can mitigate muscle loss in microgravity, studying the growth of microalgae for oxygen production and nutrition, and examining the effects of space conditions on cyanobacteria. These studies are particularly relevant as India prepares for its Gaganyaan mission, which includes sending astronauts to the International Space Station.

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