



Daily Current Affairs



To The Point by Dhananjay Gautam

Table Of Content 29 Oct 2024

1. U.S., Japan and South Korea join hands to support digital infrastructure in India
2. Heritable Human Genome Editing (HHGE)
3. Multilateral Development Banks
4. 95% of Land Records in Rural India Digitized
5. Arbitration and Conciliation (Amendment) Bill, 2024
6. 21st Livestock Census
7. What is Cybersquatting?
8. What are Tardigrades?
9. Global Nature Conservation Index (NCI) 2024
10. C-295 Military Aircraft



Subscribe to our

You Tube Freedom UPSC with **Dhananjay Gautam**

1

U.S., Japan and South Korea join hands to support digital infrastructure in India

Context: The **Digital Infrastructure Growth Initiative for India (DiGi) Framework** was signed by the **United States, Japan, and South Korea** to strengthen digital infrastructure cooperation with **India** in areas of shared priorities.

**DiGi Framework:**

- **Partner Agencies:**
 - U.S. International Development Finance Corporation (DFC)
 - Japan Bank for International Cooperation (JBIC)
 - Export-Import Bank of Korea (Korea Exim-bank)
- **Objective:** To collaborate with the **Indian private sector** in advancing **digital infrastructure**.
- **Implementation:** Focuses on **information and communications technology (ICT)** projects, including:
 - **5G and Open RAN**
 - **Submarine cables and optical fiber networks**
 - **Data centers, smart cities, e-commerce**
 - **Artificial intelligence (AI) and quantum technology**

Digital Public Infrastructure (DPI) in India:

- **India Stack:** India is the first country to establish three foundational DPIs:
 - **Digital identification (Aadhaar)**
 - **Real-time payments (UPI)**
 - **Data Empowerment and Protection Architecture (DEPA)**
- **Significance:**
 - **Inclusive Development:** Achieved **80% financial inclusion** (2018-2023) and **87% direct benefit transfers** to poor households during COVID-19.
 - **Economic Growth:** DPI can increase economic growth by **33%** in the financial sector.
 - **Emission Reduction:** DPI in climate sector could **accelerate emissions control** by 5-10 years.

India's Global DPI Efforts:

- **US-India Global Digital Development Partnership:** Aims to promote **responsible use of digital technologies** in Asia and Africa.
- **G20 Framework for DPI:** Established under **India's G20 leadership** to provide principles for **DPI design and deployment**.
- **Virtual Global DPI Repository:** India is setting up this repository to offer **DPI tools, resources, and global experiences**.

The **DiGi Framework** and India's DPI initiatives underscore a commitment to **digital transformation** and **inclusive development** through global partnerships and responsible technology use.

Subscribe to Our



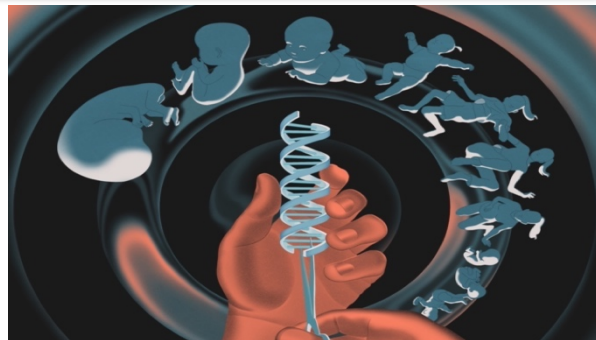
YouTube **Freedom UPSC with Dhananjay Gautam**

Page No

2

2 Heritable Human Genome Editing (HHGE)

Context: South Africa has become the **first country to permit Heritable Human Genome Editing (HHGE)**, according to its new **Ethics in Health Research guidelines**. This move allows **genome editing to create genetically modified children**, marking a departure from the restrictive frameworks promoted by entities like the **WHO**, which advocate for broad **societal consensus**.



About HHGE:

- **Germline Cell Editing:** Unlike **somatic cell editing**, which affects only the treated individual, **HHGE** introduces edits in **germline cells** (sperm, eggs, or embryos), making these changes **inheritable**.
- **Techniques:** Achieved through tools like:
 - **Zinc-finger nucleases (ZFNs)**
 - **Transcription Activator-Like Effector Nucleases (TALENs)**
 - **CRISPR/Cas9**
 - **Mega-nucleases**

Potential Applications of Heritable Genome Editing:

- **Disease Prevention:** Could prevent **heritable diseases** like **cystic fibrosis**, **Huntington's disease**, and **sickle cell anemia**.
- **Genetic Research:** Potential to enhance understanding of **human biology**, **genetics**, and **disease mechanisms**.
- **Assisted Reproductive Technology:** Can improve technologies like **in vitro fertilization (IVF)**.

Concerns with Heritable Genome Editing

- **Unforeseen Consequences:** Heritable edits affect future generations, posing risks of **multigenerational impacts**.
- **Ethical Issues:** Raises questions on **human dignity** and **genetic diversity**, challenging **religious** and **moral values**.
- **Societal Impact:** Risks the creation of **"designer babies"**, where traits like **intelligence**, **appearance**, and **athleticism** might be engineered, potentially deepening **social inequality**.

Steps for Regulating Human Genome Editing:

- **Oviedo Convention:** Adopted by European nations, prohibits **creation of human embryos** through genome editing.
- **International Commission on Human Germline Genome Editing:** Evaluates potential **clinical uses** of human germline editing.
- **India's Stance:** **Human germline editing** and **reproductive cloning** are banned by India's **National Guidelines for Stem Cell Research**.

South Africa's decision on **HHGE** places it at the forefront of genome editing, sparking a global dialogue on the **ethics**, **risks**, and **societal impacts** of inheritable genetic modifications.

Subscribe to Our

 YouTube **Freedom UPSC with Dhananjay Gautam**

Page No

3

3 Global South's role in shaping Multilateral Development Banks

Context: India's Finance Minister recently emphasized the role of the **Global South** in shaping and reforming **Multilateral Development Banks (MDBs)** at the **1944 Bretton Woods Conference**, which led to the establishment of the **World Bank** and **International Monetary Fund (IMF)**. Highlighting the contributions and evolving needs of the Global South, she advocated for **MDB reforms** that promote **inclusivity** and **better representation**.

Contribution of the Global South to MDBs:

- **Founding Role:** The Global South, including developing countries, played a crucial role at the **Bretton Woods Conference**, which laid the groundwork for the **World Bank** and **IMF**.
- **New Institutions:** The establishment of alternative institutions such as the **New Development Bank (NDB)** and the **Asian Infrastructure Investment Bank (AIIB)** demonstrates the South's active role in shaping MDBs that better address **regional needs**.
- **Increased Commitments:** Economically rising nations like **India** and **China** have expanded their financial commitments to MDBs, underscoring their investment in **global economic stability**.

Need for MDB Reforms from the Perspective of the Global South:

1. **Inadequate Representation:** Currently, **59.1%** of **IMF voting shares** are held by countries that represent only **13.7%** of the global population, highlighting the **underrepresentation** of developing countries.
2. **Debt Relief Requirements:** Many Global South nations face high levels of **debt distress**, with around **79 low- and middle-income countries** needing relief.
3. **Addressing Global Challenges:** Issues like **climate change**, **pandemics**, and **supply chain disruptions** impact the Global South more acutely, calling for additional support from MDBs.

India's Recommendations for MDBs:

1. **Promote Two-Way Exchange of Innovations:** MDBs should draw from the Global South's experiences in areas like **digital inclusion** and **sustainable energy**, which could enrich **development financing** strategies.
2. **Competitive Pricing Models:** Adopting more **competitive pricing** would encourage **middle-income countries** to participate actively in MDB initiatives, deepening the impact of **development finance**.
3. **Evidence-Based Index Development:** Global indices, such as the **Worldwide Governance Indicators** and the **B-Ready Index**, should rely on a **data-driven, evidence-based approach**, ensuring accurate representation and relevance.

India's emphasis on MDB reforms reflects its commitment to ensuring that MDBs evolve to support **inclusive, data-driven, and need-based development**, addressing both regional and global challenges effectively.





4

95% of Land Records in Rural India Digitized

Context: The **Minister of Rural Development** recently announced that **95% of rural land records** in India have been digitized, covering **over 6.26 lakh villages** since 2016. This achievement represents a significant advancement in **secure, transparent, and accessible land ownership** in India.

Significance of Digitizing Land Records:

- Addressing Traditional Challenges:** Digitization helps tackle **land disputes**, which constitute over **60% of litigation in India**. It also aids in addressing **encroachments, benami property issues**, and inefficient **manual processes**.
- Accurate Surveys and Planning:** **Geospatial mapping** brings transparency, ensuring **access and equity** for vulnerable groups, enhancing planning accuracy.
- Promoting Agricultural Credit:** With **clear land titles**, farmers can access **capital and credit** more easily, supporting agricultural productivity.
- Additional Benefits:** **Improved subsidy targeting**, timely **compensations** for land acquisition or disaster relief, and potential **GDP growth**.

Issues in Digitizing Land Records:

- Cumbersome and Resource-Intensive Process:** Many **land records remain incomplete** and are spread across multiple departments.
- Slow Digitization Process:** Delays affect **infrastructure projects** and leave **land ownership data outdated**.
- Need for Legal and Administrative Overhaul:** Digitization alone isn't enough—there is a need to **update tenancy laws and land-use regulations** for accurate reporting.

Way Forward:

- Technological Integration:** Employ **blockchain, artificial intelligence (AI), and machine learning (ML)** for secure and efficient land governance.
- Policy Reforms:** **Review the Registration Act** and other regulations to streamline digitization efforts.

Government Initiatives Enhancing Land Digitization:

- Digital India Land Records Modernization Programme (DILRMP):** Aims to establish a **modern, transparent land records system**.
- Unique Land Parcel Identification Number (ULPIN) or Bhu-Aadhaar:** A **14-digit alphanumeric code** uniquely identifying each land parcel using geo-coordinates.
- National Generic Document Registration System (NGDRS):** Standardizes **document registration** across states for consistency.
- SVAMITVA Scheme:** Provides **Record of Rights** to household owners in **inhabited village areas**, promoting formal ownership.

India's land digitization drive underlines the government's commitment to **streamlined governance, boosting agriculture, and improving economic productivity** through effective land management.

Subscribe to Our

YouTube **Freedom UPSC with Dhananjay Gautam**

Page No

5

5 Arbitration and Conciliation (Amendment) Bill, 2024

Context: The Government of India has invited public comments on the draft **Arbitration and Conciliation (Amendment) Bill, 2024**, which aims to amend the **Arbitration and Conciliation Act, 1996**. The proposed amendments seek to **strengthen institutional arbitration**, reduce **court intervention**, and ensure **timely conclusion** of arbitration proceedings in India.



Key Aspects of Arbitration in India:

- **Arbitration:** A method of **alternative dispute resolution** where parties agree to have their case heard by a **qualified arbitrator**.
- **Arbitration and Conciliation Act, 1996:** Governs arbitral proceedings in India, based on the **UNCITRAL Model Law on International Commercial Arbitration (1985)** and **UNCITRAL Conciliation Rules (1980)**. The Act was amended in **2015, 2019, and 2021**.

Key Features of the Draft Bill, 2024

1. **Omission of Conciliation:** The Act will now be called the **Arbitration Act, 1996** as **conciliation provisions** have been moved to the **Mediation Act, 2023**.
2. **Emergency Arbitrator:** Allows for the appointment of an **emergency arbitrator** to grant **interim measures** before an arbitral tribunal is constituted.
3. **Institutional Focus:** Promotes **institutional arbitration** over **ad-hoc arbitration**, aiming for greater **efficiency**.
4. **Arbitration Council of India (ACI):** ACI is empowered to **create model procedural rules** for arbitral proceedings and **recognize arbitral institutions**.
5. **Video Conferencing:** Permits **arbitrations to be conducted via video conferencing**, facilitating remote participation.
6. **Appellate Arbitral Tribunal:** Establishes a tribunal to **handle applications against arbitral awards**, adding an appellate layer.

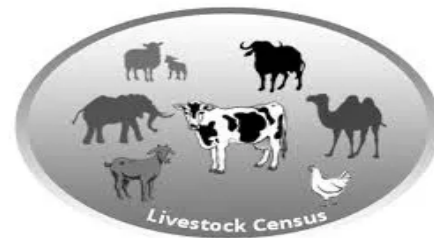
Issues in the Current Arbitration System

1. **Lack of Diversity:** Retired judges dominate arbitrator appointments, limiting **diversity**.
2. **Trust Issues:** Concerns about the **independence and impartiality** of arbitrators persist.
3. **Judicial Intervention:** Frequent **court involvement** in arbitral matters often leads to **delays** in awards.

These amendments, if implemented, would align India's arbitration framework with global standards and bolster its attractiveness as a **hub for institutional arbitration**.

6 21st Livestock Census

Context: The **21st Livestock Census** has been launched by the Union Minister of Fisheries, Animal Husbandry, and Dairying in New Delhi, aiming to provide updated data on India's livestock population.



About the 21st Livestock Census

- **Frequency:** Conducted every five years.
- **Scope:** Includes a headcount of domesticated animals, poultry, and stray animals.
- **Data Collected:** Includes species, breed, age, sex, and ownership status of animals.
- **History:** Began in 1919, with 20 censuses conducted so far; the last was in 2019.
- **Enumeration Period:** Scheduled between October 2024 and February 2025.

Focus of the 21st Livestock Census

- **Animal Species:** Covers 16 animal species, including:
 - Cattle, buffalo, mithun, yak, sheep, goat, pig, camel, horse, ponies, mule, donkey, dog, rabbit, and elephant.
- **Breeds Counted:** Information on 219 indigenous breeds as recognized by ICAR-NBAGR (National Bureau of Animal Genetic Resources).
- **Poultry:** Includes fowl, chicken, duck, turkey, geese, quail, ostrich, and emu.

New Features in the 21st Census

- **Fully Digitized:** Like the 2019 census, it will feature:
 - Online data collection via a mobile app
 - Monitoring through a digital dashboard
 - Location tagging with latitude and longitude
 - Automated report generation through software.
- **New Data Points:**
 - **Pastoral Animals and Pastoralists:** Data on pastoralists' contributions, socio-economic status, and livestock holdings.
 - **Income Data:** Identifies households for whom livestock is a primary income source.
 - **Stray Cattle Details:** Includes data on the gender of stray cattle.

The 21st Livestock Census aims to provide a more comprehensive and granular view of India's livestock sector, enhancing planning and policy decisions.

7 What is Cybersquatting?

Context: Recently, a Delhi-based developer registered the domain 'JioHotstar,' sparking discussions about cybersquatting.

Definition of Cybersquatting:

Cybersquatting is the act of registering or using a domain name that is identical or confusingly similar to a trademark, corporate, or personal name, typically with the intent to profit from it. This practice is often viewed as a form of **extortion** or an attempt to undermine competitors by taking control of their brand identities online.



Types of Cybersquatting:

1. Typosquatting:

- This involves registering domain names that contain typographical errors of well-known brands.
- **Example:** Domains like **yajoo.com** (for Yahoo) or **facebok.com** (for Facebook) aim to capture traffic from users who accidentally misspell the brand name.

2. Identity Theft:

- This occurs when a cybersquatter creates a website that mimics an existing brand to confuse consumers.
- The intention is to mislead users into thinking they are visiting the legitimate site.

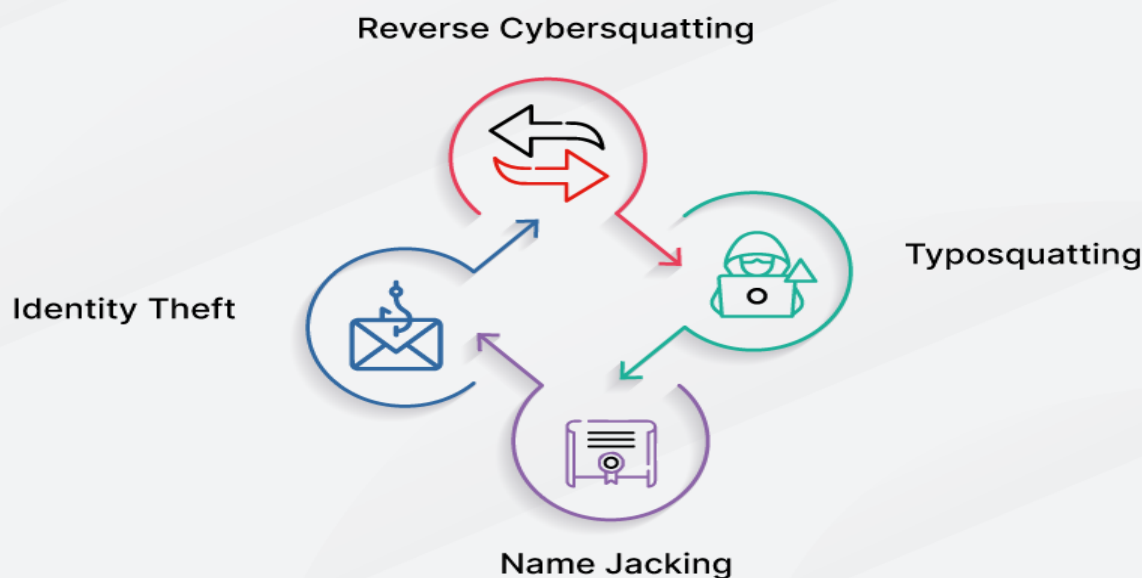
3. Name Jacking:

- This involves impersonating a well-known individual or celebrity online.
- It includes creating fake websites or social media profiles using a celebrity's name to mislead or deceive the audience.

4. Reverse Cybersquatting:

- This is when individuals falsely claim a trademark as their own and accuse the legitimate domain owner of cybersquatting.
- Essentially, it flips the concept of cybersquatting on its head.

Types of Cybersquatting



Legal Framework in India:

In India, there are currently **no specific laws** that directly condemn, prohibit, or penalize cybersquatting. However:

- Domain names are considered trademarks under the **Trademark Act, 1999**.
- Individuals who register or use an identical or confusingly similar domain name can be held liable for **trademark infringement**, as defined under **Section 29** of the Trademark Act, 1999.

What is Phishing?

Definition: Phishing is a type of cybercrime that involves tricking individuals into providing sensitive information, such as usernames, passwords, credit card numbers, bank account details, or other personal data.

- **Method:** Phishing typically occurs through deceptive emails, messages, or websites that appear to be from legitimate sources. Attackers aim to manipulate victims into divulging their confidential information so they can utilize or sell it for malicious purposes.

Both cybersquatting and phishing are significant issues in the realm of internet security, highlighting the need for robust legal frameworks and consumer awareness to mitigate risks.

Subscribe to Our

YouTube **Freedom UPSC with Dhananjay Gautam**

Page No

9

8 What are Tardigrades?

Context: Recent research has revealed the genetic mechanisms that enable a newly discovered species of tardigrades, **Hypsibius henanensis**, to withstand high levels of radiation.

About Tardigrades:

- **Common Names:** Tardigrades are often referred to as **water bears** or **moss piglets**.
- **Classification:** They are tiny, free-living invertebrates that belong to the phylum **Tardigrada**.
- **Diversity:** Approximately **1,300 species** of tardigrades have been identified globally.



Habitat:

- **Environmental Preferences:** While tardigrades are considered aquatic because they need a thin layer of water to prevent dehydration, they thrive in a variety of environments, ranging from the deep sea to sandy dunes.
- **Preferred Habitats:** They are commonly found in **freshwater mosses** and **lichens**, which is why they are nicknamed **moss piglets**.

Radiation Resistance Mechanisms: Researchers have identified three key factors that help **Hypsibius henanensis** survive radiation:

1. **DNA Repair:** Tardigrades have a remarkable ability to quickly repair **double-strand breaks in DNA** caused by radiation exposure, utilizing a protein known as **TRID1**.
2. **Gene Activation:** During radiation exposure, a specific gene is activated, leading to the production of two proteins that play crucial roles in **mitochondrial ATP synthesis**. Interestingly, these proteins also contribute to DNA repair processes in tardigrades.
3. **Antioxidant Production:** Tardigrades can minimize radiation damage by generating a substantial amount of proteins that act as effective **antioxidants**, which help eliminate **free radicals** before they can harm cellular components.

Significance of Research: The findings from this research hold promise for various applications, including:

- **Space Exploration:** Potentially protecting astronauts from harmful radiation during space missions.
- **Nuclear Cleanup:** Assisting in the remediation of nuclear pollution.
- **Cancer Treatment:** Improving therapeutic strategies for cancer patients by understanding DNA repair mechanisms.

What is Radiation?

Definition: Radiation is energy that travels in the form of **waves** or **particles** and is an inherent part of our environment.

- **Sources of Exposure:** People are exposed to radiation from several sources, including:
 - **Cosmic Rays:** High-energy particles from outer space.
 - **Natural Radioactive Materials:** Found in soil, water, food, and air, as well as within the human body itself.

Understanding the resilience of tardigrades to extreme conditions, including radiation, not only sheds light on their biology but also opens avenues for advancements in science and technology that could benefit humanity in various fields.

Subscribe to Our

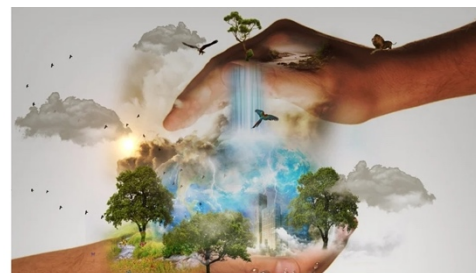
YouTube **Freedom UPSC with Dhananjay Gautam** 10

9 Global Nature Conservation Index (NCI) 2024

Context: India has received a concerning score of **45.5** (out of 100) and is ranked **176th** in the **Global Nature Conservation Index (NCI) 2024**.

About Nature Conservation Index (NCI):

- **Developed By:** The index was created by the **Goldman Sonnenfeldt School of Sustainability and Climate Change** at **Ben-Gurion University of the Negev**.
- **Purpose:** The NCI provides a data-driven analysis to evaluate each country's efforts in balancing conservation with development.
- **Target Audience:** It aims to assist governments, researchers, and organizations in identifying key issues and enhancing conservation policies for long-term biodiversity protection.



Pillars of the Index:

This inaugural edition of the NCI ranks countries based on their efforts in relation to four key pillars:

1. **Managing Protected Areas:** Evaluating the effectiveness and coverage of protected regions.
2. **Addressing Threats Against Biodiversity:** Assessing actions taken to mitigate threats to ecosystems.
3. **Nature and Conservation Governance:** Analyzing the frameworks in place to support conservation efforts.
4. **Future Trends in Natural Resource Management:** Projecting how countries plan to manage their natural resources sustainably.

Highlights of the 2024 Index:

- **India's Ranking:** India's low ranking is primarily due to **inefficient land management** practices and increasing threats to its biodiversity.
- **Biodiversity Threats:** The assessment identified several threats to India's biodiversity, including:
 - **Habitat Loss and Fragmentation:** Driven by agriculture, urbanization, and infrastructural development.
 - **Climate Change:** Compounding the risks faced by various species and ecosystems.
- **Top-Ranking Countries:**
 - **First Place: Luxembourg**
 - **Other Top Performers: Estonia, Denmark,** and countries like **Zimbabwe** and **Costa Rica** also ranked in the top 10.

What is Biological Diversity?

Definition: Biological diversity, or **biodiversity**, encompasses:

- The variety of **genes** among individuals of a species.
- The richness and variety of all **plant** and **animal species** within an ecosystem.
- The diverse **ecosystems** present on Earth.

Importance: Biodiversity is crucial for ecosystem health, resilience, and the overall functioning of the planet, influencing food security, climate stability, and human health.

Subscribe to Our

 YouTube **Freedom UPSC with Dhananjay Gautam**

10 C-295 Military Aircraft

Context: Prime Minister Narendra Modi and Spanish Prime Minister Pedro Sanchez recently inaugurated India's first private sector Final Assembly Line (FAL) for manufacturing C-295 military aircraft at the Tata Aircraft Complex in Vadodara, Gujarat. This project aligns with the goal of promoting self-reliance in the Indian defence industry and is a significant part of the "Make in India" initiative.



C-295 Aircraft Deal:

- **Agreement Amount:** The Government of India signed a deal with Airbus Defence and Space from Spain in September 2021 for 56 C-295 aircraft valued at ₹21,935 crore.
- **Production Details:**
 - **Manufacture in India:** Out of the 56 aircraft, 40 will be produced in India in collaboration with Tata Advanced Systems and Airbus.
 - **Imported Aircraft:** 16 aircraft will be imported in ready condition from Spain.
- **Arrival Timeline:**
 - The first aircraft arrived in India in September 2023.
 - All 16 imported aircraft are expected to be delivered by August 2025.
 - The manufacturing of the first C-295 aircraft in India is projected to be completed by September 2026, with the remaining 39 aircraft ready by 2031.

Significance of the Project:

- **Employment Opportunities:** The project is expected to generate 15,000 highly skilled jobs and an additional 10,000 indirect jobs.
- **Promotion of Self-Reliance:** This initiative supports self-reliance in the Indian defence sector.
- **Private Sector Participation:** This marks the first military aircraft manufacturing project by a private sector entity in India, with Tata Advanced Systems leading the effort in partnership with Airbus Defence and Space.



Features of the C-295 Aircraft:

- **Short Take-Off and Landing:** Capable of taking off in **320 meters** and landing in **670 meters**, making it suitable for operations in challenging terrains like **Ladakh, Kashmir, Assam, and Sikkim**.
- **Payload Capacity:** Can carry a payload of **7,050 kg**, accommodating **71 troops, 44 paratroopers, 24 stretchers, or 5 cargo pallets**.
- **Flight Duration:** The aircraft has a continuous flight capability of up to **11 hours**.
- **Modern Control System:** Features a smart control system with **touchscreen controls** in the crew cabin.
- **Ramp Door:** Includes a ramp door at the rear for faster loading and unloading.
- **Engine Specifications:** Equipped with two **Pratt & Whitney PW127 turboprop engines**.
- **Indigenous Electronic Warfare Suite:** All aircraft will have an **indigenously built electronic warfare suite**, enhancing India's defence capabilities.

Conclusion: The manufacturing of the C-295 aircraft represents a major advancement in India's defence industry, contributing to self-reliance and local job creation while fostering technological development. This project highlights India's commitment to enhancing its defence capabilities and encouraging private sector involvement in military production.

freedom UPSC
TOGETHER WE SCALE HEIGHTS

