

# **CURRENT AFFAIRS**

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- ◆ **INDEX**
- ◆ **K9-Vajra**
- ◆ **Agnibaan SOrTeD**
- ◆ **Women In Peacekeeping**
- ◆ **India's Tryst with Antarctica**
- ◆ **Tadoba-Andhari Tiger Reserve**
- ◆ **RBI Brings Back 100 Tonnes Of Gold From Vault Of UK To India**
- ◆ **Heat Wave**
- ◆ **Hoolock Gibbon**
- ◆ **Core Sectors Output**

## ◆ K9-Vajra

### ◆ Overview:

- ◆ Several key 'Made in India' defence projects, including proposals for acquiring more K-9 Vajra self-propelled howitzers and fighter aircraft engines, are awaiting final approval by the Centre after the elections.

### ◆ About K-9 Vajra:

- ◆ It is a 155 mm, 52-caliber tracked self-propelled artillery system.
- ◆ It can fire shells at great elevation angles to hit targets far away.
- ◆ It is built by Larsen & Toubro with technology transferred from South Korean defence major Hanwha Défense based on its K9 Thunder platform.
- ◆ It can perform a variety of missions due to its capacity to fire a wide range of artillery ammunition, including high explosive, smoke, and illumination shells.

### ◆ Features:

- ◆ It has all-welded steel armour up to 19mm thick.
- ◆ The main weapon is the 155mm / 52 calibre gun.
- ◆ The gun weighs 50 tonnes and can fire 47kg bombs.
- ◆ It has a burst rate of fire of three rounds per 15 seconds and a maximum rate of fire of six to eight rounds per minute for three minutes.
- ◆ It can strike enemy targets at around 50 kilometres.



- ◆ It can also turn around at zero radius, basically at the same place where they are standing.
- ◆ The K9 uses a digital fire control system, by which it can fire multiple rounds that can impact a given area at the same time.

### ◆ Agnibaan SOrTeD

- ◆ **News :-**
- ◆ For the second time, the launch of AgniKul 'Agnibaan SOrTeD' has been postponed.



### ◆ **About Agnibaan SOrTeD:**

- ◆ Agnibaan SubOrbital Technological Demonstrator (SOrTeD) is a single-stage launch vehicle powered by AgniKul's patented Agnilet engine.
- ◆ It is the world's first single piece 3D printed semi-cryogenic rocket engine.
- ◆ It will be launched from India's first private launchpad, ALP-01, located inside the Indian space agency ISRO's Sriharikota spaceport.

### ◆ **Features:**

- ◆ It is India's first ever vehicle equipped with a semicryogenic engine, the Agnilet, a subcooled liquid oxygen-based propulsion system developed indigenously.
  - ◆ The rocket engine will burn kerosene in liquid oxygen and can be directly used in the rocket.
  - ◆ It can carry a 100-kg payload up to a height of 700 km with a lift of mass of 14,000 Kgs.
  - ◆ It can access both low- and high-inclination orbits and is completely mobile.
  - ◆ It will also have the first ever Ethernet-based avionics architecture and fully in-house developed autopilot software from India.
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- ◆ To ensure its compatibility with multiple launch ports, AgniKul has built a launch pedestal named 'Dhanush' that will support the rocket's mobility across all its configurations.

### ◆ **Points to Remember:**

- ◆ AgniKul Cosmos is an IIT Madras incubated space start up based in Chennai.
- ◆ It became the first company in the country to sign an agreement with ISRO under the IN-SPACe initiative to have access to the space agency's expertise and its facilities to build Agnibaan in December 2020.
- ◆ In 2022, Agnikul inaugurated India's first private launchpad and mission control centre at Satish Dhawan Space Centre.

## Women In Peacekeeping

### ◆ What is UN Peacekeeping?

- ◆ UN Peacekeeping began in 1948 when the UN Security Council authorised the deployment of UN military observers to the Middle East.
- ◆ UN Peacekeeping helps countries navigate the difficult path from conflict to peace.
- ◆ It deploys troops and police from around the world, integrating them with civilian peacekeepers to address a range of mandates set by the UN Security Council (UNSC) and the General Assembly.

### ◆ What is Background of Indian Women in Peacekeeping Forces?

- ◆ Background: For the first time in the history of UN peacekeeping, India sent an all-female Formed Police Unit (FPU) to be deployed in Liberia in 2007 after a civil war ravaged the African nation.
- ◆ Intent: Recently, at the UN Security Council (UNSC), Indian officials called for more female participation in public life and the elimination of violence against them as a prerequisite for promoting lasting peace around the world.
- ◆ Significance: In a profession that continues to be heavily dominated by men, and in a nation that is riddled with gender violence, these female police officers from India are breaking stereotypes to represent their country on the world stage.

### ◆ What is the current status of Women in UN Peacekeeping forces?

- ◆ Multi-Role: Women are deployed in all areas – police, military and civilian – and have made a positive impact on peacekeeping environments, including in supporting the role of women in building peace and protecting women's rights.
- ◆ Current Numbers: According to the UN, in 2020, out of approximately 95,000 peacekeepers, women constitute 4.8% of military contingents and 10.9% of formed police units and 34% of justice and corrections government-provided personnel in UN Peacekeeping missions.

- ◆ Global Effort Initiative: UN Police Division launched 'the Global Effort' to recruit more female police officers into national police services and into UN police operations around the world.
- ◆ **Why is it important to have women peacekeepers?**
- ◆ **Better Access:** Women peacekeepers can better access the population, including women and children - for example, by interviewing and supporting survivors of gender-based violence and violence against children - thereby generating critical information that would otherwise be difficult to reach.
- ◆ **Building Trust and Confidence:** Women peacekeepers are essential enablers to build trust and confidence with local communities and help improve access and support for local women.
- ◆ For example, by interacting with women in societies where women are prohibited from speaking to men.



## India's Tryst with Antarctica

### ◆ Context :-

The icy expanse of Antarctica, untouched by human civilization and teeming with unique life forms, has long held a sense of mystery. This remoteness, however, is rapidly changing. Tourism to the continent has seen a phenomenal rise, with visitor numbers jumping from 8,000 in 1993 to over 1,05,000 in 2022. This surge has ignited concerns about the continent's delicate ecosystem, prompting the ongoing 46th Antarctic Treaty Consultative Meeting (ATCM) held in Kochi, Kerala to debate the very future of tourism in this pristine wilderness.

- ◆ The debate at the ATCM represents a critical juncture for Antarctica. India, as a rising power with a growing stake in the continent's future, has a unique opportunity to champion responsible tourism and ensure that the pristine beauty of Antarctica remains accessible for generations to come.

### ◆ Why is Antarctica Becoming Increasingly Significant?

- ◆ Climate Change Implications: Antarctica plays a crucial role in Earth's climate system, and the melting of its ice sheets has far-reaching consequences for global sea levels and weather patterns.
- ◆ The recent satellite pictures showed that the Antarctic iceberg called A23a was moving beyond the northern tip of the Antarctic Peninsula.
- ◆ Resource Potential: Antarctica is believed to hold significant reserves of valuable minerals, including rare earth elements, coal, and potentially untapped oil and gas deposits.
- ◆ With the growing global demand for resources and the depletion of traditional sources, the potential for responsible and sustainable resource exploration in Antarctica has gained attention.
- ◆ Scientific Research Opportunities: Antarctica's unique and pristine environment offers unparalleled opportunities for scientific research across various disciplines, including glaciology, astronomy, geology, and biology.
- ◆ As technological advancements enable more sophisticated research methods, the scientific value of Antarctica continues to increase.
- ◆ Example: The IceCube Neutrino Observatory, located at the

Amundsen-Scott South Pole Station in Antarctica.

- ◆ **Rising Geopolitical Interests:** As nations seek to establish their presence and influence in strategically important regions, Antarctica has become an area of growing geopolitical interest.
- ◆ Countries are vying for a stronger voice in the governance and decision-making processes related to the Antarctic region, driven by potential resource opportunities and a desire for global influence.
  
- ◆ The USA has three stations in Antarctica. China opened its 5th station (Qinling Station) in Antarctica in February, 2024
- ◆ Environmental Monitoring and Conservation: Antarctica serves as a critical indicator of global environmental changes, and monitoring its ecosystems and wildlife provides valuable insights into the health of the planet.
- ◆ The Antarctic Peninsula is one of the regions experiencing the fastest warming on Earth, leading to significant changes in penguin and krill populations.
- ◆ Tourism and Adventure: As adventure tourism continues to grow, Antarctica's unique and untouched landscapes have become an attractive destination for travelers seeking extraordinary experiences.
- ◆ According to the International Association of Antarctica Tour Operators (IAATO), a record 105,331 people visited Antarctica over the 2022-23 season.
- ◆ **What is the Antarctic Treaty?**
- ◆ **About:**
- ◆ Signed in 1959 by 12 countries active in Antarctic research during the International Geophysical Year (1957-58).
- ◆ Currently has 57 member nations including India (joined the treaty in 1983).
- ◆ **Key Provisions:**
- ◆ Peaceful Use: Antarctica is dedicated to peaceful purposes only (Article I).
- ◆ Scientific Collaboration: Freedom of scientific investigation and cooperation are encouraged (Article II).
- ◆ Information Sharing: Scientific observations and results must be exchanged and made readily available (Article III).
- ◆ **Territorial Claims:**



- ◆ Seven signatory countries (Argentina, Australia, Chile, France, New Zealand, Norway, and the UK) have overlapping territorial claims.
- ◆ Other countries do not recognize these claims.
- ◆ The US and Russia maintain a "basis of claim" without asserting it.
- ◆ **Article IV maintains the status quo by:**
  - ◆ Disallowing any existing activity to be used to support or deny territorial claims.
  - ◆ Prohibiting new or expanded territorial claims while the Treaty is in force.
- ◆ **Inspection Regime:**
  - ◆ To ensure adherence to the Treaty, all areas of Antarctica, including stations and installations, are subject to inspection by any Party at any time (Article VII).
- ◆ **What is the Significance of Exploring Antarctica For India?**
  - ◆ **Advancing India's Space Program:** Antarctica's unique location and conditions make it an ideal testing ground for India's space technologies, such as landers, rockets and remote sensing systems.
  - ◆ Conducting environment-friendly experiments and trials in the harsh Antarctic environment could help India refine its space technologies for future missions.
  - ◆ **Securing Energy and Mineral Resources:** With India's growing energy demands ( third-largest consumer of energy in the world) and the need for critical minerals, Antarctica's potential for responsible and sustainable resource exploration could help address the country's long-term resource security needs, subject to the Antarctic Treaty System's regulations.
  - ◆ **Advancing Climate Change Research and Adaptation:** India's geographical location (Cap of Himalayas to North and Sandal of Seasin South) that increases its vulnerability to climate change impacts make it crucial to understand the changes in Antarctica climate systems.
  - ◆ **Strengthening India's Maritime Capabilities:** India's involvement in Antarctic logistics and operations could provide valuable opportunities to enhance its maritime capabilities, including navigation in icy waters, ship-building for polar environments, and developing advanced icebreaker vessels.

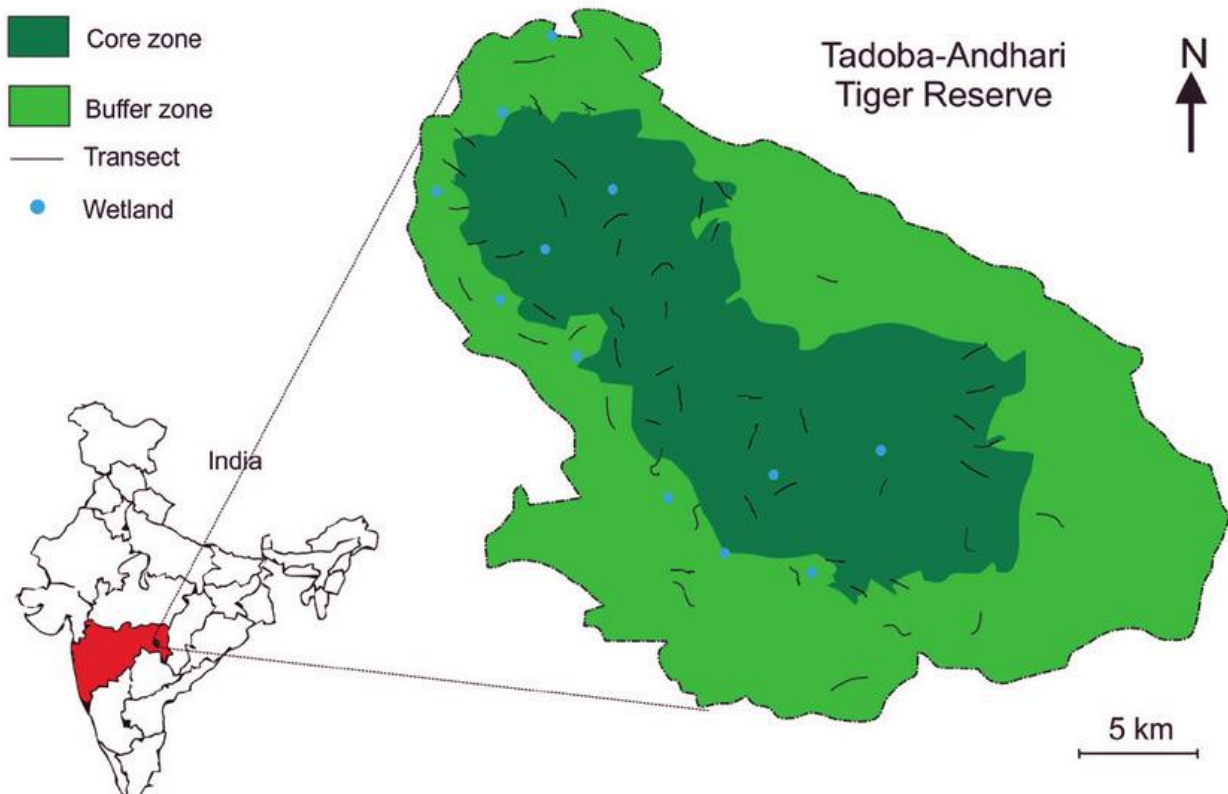
- ◆ This would bolster India's strategic interests in the Indian Ocean region and beyond.
- ◆ **Exploring Bioprospecting Opportunities:** Antarctica's unique ecosystems have the potential to yield novel microorganisms, enzymes, and bioactive compounds with applications in industries such as pharmaceuticals, biotechnology, and agriculture. Indian researchers could explore bioprospecting opportunities in Antarctica, contributing to the country's bioeconomy.
- ◆ **How can India Enhance its Role and Contributions in Antarctica?**
- ◆ **Developing Advanced Autonomous Systems for Polar Exploration:** India can be a frontrunner in developing advanced autonomous systems leveraging robotics and artificial intelligence, such as unmanned aerial vehicles (UAVs) and underwater vehicles (AUVs), specifically designed for polar exploration.
  - ◆ These systems could be used for mapping, surveying, and monitoring by different countries, enhancing India's scientific diplomacy.
- ◆ **Collaborate on Rare Earth Element (REE) Exploration:** With the growing demand for rare earth elements in high-tech industries, India could collaborate with other nations to conduct geological surveys and assessments of potential REE deposits in Antarctica.
  - ◆ This could position India as a key player in future responsible and sustainable REE exploration efforts, subject to the Antarctic Treaty System's regulations.
- ◆ **Invest in Sustainable Infrastructure Development:** India could invest in developing sustainable infrastructure in Antarctica, such as renewable energy systems, waste management facilities, and eco-friendly transportation solutions.
  - ◆ This would not only support India's research and logistical operations but also demonstrate its commitment to minimizing environmental impacts in the region.
  - ◆ Currently, Maitri and Bharati are the two active research stations that India operates in Antarctica.
  - ◆ In April 2024, the Department of Posts opened a second branch of the post office at the Bharati research station in Antarctica after

almost four decades.

- ◆ **Promote Responsible and Sustainable Antarctic Tourism:** India could collaborate with international partners to develop guidelines and best practices for responsible and sustainable Antarctic tourism.
- ◆ This could involve training Indian tour operators and guides on minimizing environmental impacts, adhering to strict regulations, and offering educational experiences that raise awareness about the region's unique ecosystems and the importance of conservation.
- ◆ India, in the 46th Antarctic Treaty Consultative Meeting, pressed for a proposal to introduce a regulatory framework governing tourism in the continent.
- ◆ Note: In 1984, India established its first post office in Antarctica at Dakshin Gangotri, which was also its first research station.  
Unfortunately, in 1988-89, Dakshin Gangotri was submerged in ice and subsequently decommissioned.
- ◆ National Centre for Polar and Ocean Research (NCPOR) is India's premier R&D institution responsible for the country's research activities in the Polar and Southern Ocean realms.

### ◆ Tadoba-Andhari Tiger Reserve:

- ◆ **Location:** It is located in the Chandrapur district of Maharashtra.
- ◆ The origin of the name "Tadoba" lies with the name of the God "Tadoba" or "Taru", worshiped by the tribes who live in the dense forests of the Tadoba and Andhari regions. While "Andhari" refers to the Andhari River that meanders through the forest.
- ◆ The total area of the reserve is 625.4 square kilometers. This includes Tadoba National Park, covering 116.55 sq. KM, and Andhari Wildlife Sanctuary of 508.85 sq. KM.
- ◆ **Corridor:** The reserve has corridor linkages with Nagzira-Navegaon and Pench Tiger Reserves within the State.
- ◆ **Habitat:** Biogeographically, the reserve falls in the Central Plateau Province of the Deccan Peninsula, with tropical dry deciduous forests and a typical Central Indian faunal assemblage.
- ◆ **Flora:**
  - ◆ Teak is the dominant tree species.
  - ◆ Other major tree species include Ain, Bamboo, Bija, Dhaoda, Haldu, Salai, Semal and Tendu.



Along the moist areas, species like Mango, Jamun and Arjun are found.

◆ **Fauna:**

- ◆ The notable faunal species include tiger, leopard, sloth bear, wild dog, gaur, chital, and sambar.
  - ◆ As many as 280 species of birds are found, apart from reptiles (54 species), amphibians (11 species) and fishes (84 species).
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◆ **RBI Brings Back 100 Tonnes Of Gold From Vault Of UK To India**

- ◆ The Reserve bank of India brings back 100 tonnes of Gold from the Vault of UK to India. This is a major shift in the Economic Policy of the RBI, as it will now hold most of its Gold in its own vault.
  - ◆ These changes have significant implications for India's economic sovereignty and global market dynamics. Most countries keep their gold in the vaults of the Bank of England or other such location and pay a fee for the privileges.
  - ◆ At present, India has huge Foreign Exchange Reserves to cover up to 11 months of Imports. As of March 31, 2024, the total gold held by the Reserve Bank was 822.10 metric tonnes as compared to 794.63 metric tonnes as of corresponding period.
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## ◆ Heat Wave

### ◆ Heatwave

- ◆ Recently, India Meteorological Department (IMD) has predicted an increase in the maximum temperature and the frequency of heatwave conditions in the forthcoming days over eastern and southern India.

### ◆ About :-

- ◆ The definition of a heatwave depends on the physiography of regions.
- ◆ Qualitatively, heat wave is a condition of air temperature which becomes fatal to human body when exposed.
- ◆ Quantitatively, it is defined based on the temperature thresholds over a region in terms of actual temperature or its departure from normal.
- ◆ The IMD will declare a heatwave:
- ◆ if the maximum temperature recorded at a station is 40 degrees Celsius or more in the plains, 37 degrees Celsius or more in the coast, and 30 degrees Celsius or more in the hills.
- ◆ a heatwave's severity is determined by its departure from normal temperature.
- ◆ there is a 'normal heatwave' when the departure is by 4.5-6.4 degrees Celsius and a 'severe heatwave' if the departure is greater.
- ◆ Heat wave declaration could also be based on actual maximum temperature:
- ◆ A 'heatwave' is when this figure is greater than 45 degrees Celsius and a 'severe heatwave' when greater than 47 degrees Celsius.
- ◆ The IMD takes these two 'routes' only when at least two stations in a meteorological subdivision report such a high maximum or when at least one station has recorded a corresponding departure from the normal for at least two consecutive days.



- ◆ Governments at various levels — State, district, and city — have prepared Heat Action Plans (HAPs).
- ◆ HAPs aim to increase preparedness and lower the adverse impacts of extreme heat by outlining strategies and measures to prepare for, address and recover from heatwaves.
- ❓ The National Disaster Management Authority and IMD are reported to be working with 23 States to develop HAPs.

### ◆ Hoolock Gibbon

- ◆ The tailless Hoolock Gibbon is the only ape found in India.
- ◆ The primate is native to eastern Bangladesh, Northeast India and Southwest China.
- ◆ The Hoolock Gibbon is categorised into two types:
- ◆ Western hoolock gibbon:
  - ◆ It inhabits in all the states of the north-east, restricted between the south of the Brahmaputra river and east of the Dibang river. And outside India, it is found in eastern Bangladesh and north-west Myanmar.
  - ◆ It is listed as Endangered under the International Union for Conservation of Nature (IUCN) Red List.
- ◆ **Eastern hoolock gibbon:**
  - ◆ It inhabits specific pockets of Arunachal Pradesh and Assam in India, and in southern China and north-east Myanmar outside India.
  - ◆ It is listed as Vulnerable under the IUCN Redlist.
  - ◆ In India, both the species are listed on Schedule 1 of the Indian (Wildlife) Protection Act 1972.



## ◆ Core Sectors Output

- ◆ India's eight core sectors' output growth moderated to 12.7% in June, 2022 from 18.1% in May, 2022 with all sectors except crude oil registering an uptick in production.
- ◆ **What are Core Sectors?**
- ◆ **Eight Core Sectors:**
- ◆ Coal, Crude Oil, Natural Gas, Refinery Products, Fertiliser, Steel, Cement, Electricity
- ◆ About:
- ◆ These comprise 40.27% of the weight of items included in the Index of Industrial Production (IIP).
- ◆ The eight core sector industries in decreasing order of their weightage:
- ◆ Refinery Products> Electricity> Steel> Coal> Crude Oil> Natural Gas> Cement> Fertilizers.
- ◆ **Index of Industrial Production:**
- ◆ IIP is an indicator that measures the changes in the volume of production of industrial products during a given period.
- ◆ It is compiled and published monthly by the Central Statistical Organization (CSO), Ministry of Statistics and Programme Implementation.
- ◆ It is a composite indicator that measures the growth rate of industry groups classified under:
- ◆ Broad sectors:
- ◆ Mining, Manufacturing, and Electricity.
- ◆ Use-based sectors:
- ◆ Basic Goods, Capital Goods, and Intermediate Goods
- ◆ Base Year for IIP is 2011-2012.
- ◆ **Significance of IIP:**
- ◆ It is used by government agencies including the Ministry of Finance, the Reserve Bank of India, etc, for policy-making purposes.
- ◆ IIP remains extremely relevant for the calculation of the quarterly and advance GDP (Gross Domestic Product) estimates.
- ◆ In 2015, Electricity was having the highest weightage in the index of 8 core industries.
- ◆ The Eight Core Industries comprise 40.27% of the weight of items included in the Index of Industrial Production (IIP).
- ◆ The current weight (April 2021), of eight core industries is given below:
- ◆ Petroleum Refinery production (28.04%),

- ◆ Electricity (19.85%),
- ◆ Steel (17.92%),
- ◆ Coal production (10.33%),
- ◆ Crude Oil (8.98%),
- ◆ Natural Gas production (6.88%),
- ◆ Cement production (5.37%),
- ◆ Fertilizer production (2.63%).

**Thank u**