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MINISTRY OF SCIENCE AND TECHNOLOGY

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THE HINDU Page 1

SUKANYA SAMRIDDHI ACCOUNT SCHEME

(Syllabus: GS Paper 2 - Social Justice)

Most small savings plans to yield more in new quarter; PPF, Sukanya rates static

Vikas Dhoot
NEW DELHI

The Union government on Friday raised the interest rates on eight of the 12 small savings schemes by 20 to 110 basis points for the January-to-March quarter of 2023, but left the returns on the popular Public Provident Fund (PPF) unchanged at 7.1% for the 11th quarter in a row. (100 basis points (bps) equal one percentage point).

The Sukanya Samriddhi Account scheme's return was also retained at 7.6%, prevailing since April 2020 when small savings scheme rates were cut across the board. The returns on Kisan Vikas Patra (KVP) and the National Savings Certificate were raised by just 20 bps each, to 7.2% and 7%, respectively.

This is the second successive quarter that the Centre has made selective increases in small savings rates. Economists said the increases were lower than expected, given the rising interest rates and high inflation in recent quarters.

For the present quarter, rates were raised – a first since January 2019 – by a marginal 10 to 30 bps for just five of the 12 schemes. As per Reserve Bank of India calculations, the small savings rates, which are pegged by a formula to the yields on government securities, were 44 to 77 bps below their formula-implied rates for nine of the 12 schemes this quarter. The PPF return for October to December, as per formula, should have been 7.72% instead of the existing 7.1%, while Sukanya Samriddhi account should have been paid 8.22% instead of 7.6%.

CONTINUED ON » PAGE 8

Rate card

A look at the interest rates for select small savings schemes in the fourth quarter of FY 2022-23 (in %)

Instruments	Existing rates	New rates
1-year time deposit	5.5	6.6
5-year time deposit	6.7	7
5-year recurring deposit	5.8	5.8
Senior Citizen Savings Scheme	7.6	8
National Savings Certificate	6.8	7
Public Provident Fund	7.1	7.1
Sukanya Samriddhi Yojana	7.6	7.6

Source: Finance Ministry

Context: The **Sukanya Samriddhi Account Scheme's** return was retained at 7.6%, prevailing since April 2020 when small savings schemes' rates were cut across the board.

Sukanya Samriddhi Account Scheme (Sukanya Samriddhi Scheme)

- **About**: A **small saving scheme** under the Government of India targeting the parents of any girl child.
- **Origin**: Also known as Sukanya Samriddhi Account, this scheme was launched by PM as a part of the **Beti Bachao, Beti Padhao campaign.** It was launched on 22nd January **2015** in Panipat, Haryana.
- **Nodal Ministry:** Ministry of **Women and Child Development.**
- **Objectives**: This scheme **focuses on encouraging the parents of the female child** for building a fund for their future education and marriage expenses.
- **Benefits**: The Sukanya Samriddhi Scheme provided an **interest rate of 8.4% and tax benefits** to every account opened under it for July-September 2019.
    - The Sukanya Samriddhi Account c**an be opened at any Post office** or branch of authorized commercial banks in the country.
- **Eligibility for Sukanya Samriddhi Yojana Account:**
    - **Only parents or legal guardians** of the girl child can open a Sukanya Samriddhi account in the name of the girl.
    - The girl child **should be less than 10 years** at the time of account opening which will be operative till the girl reaches the age of 21 years.
    - Amounts can be **deposited for 15 years** into the Sukanya Samriddhi account and remain **operative for 21 years** from the date of opening of the account.
    - The **initial investment for opening an account is Rs. 250** which can reach a maximum amount of Rs. 1,50,000 annually with further deposits in the multiples of Rs. 100.
    - There can be **only one account per child** under the Sukanya Samriddhi Yojana.
    - The **birth certificate of the girl child** along with other ID proofs should be submitted to the bank while opening the account.

THE HINDU Page 3

MUDUMALAI TIGER RESERVE (MTR)

(Syllabus: GS Paper 3 - Env & Eco)

'Anomalies' found at Sigur corridor school in Mudumalai Tiger Reserve

Rohan Premkumar
UDHAGAMANDALAM

All-terrain vehicles, watchtowers, a shower to entice elephants and a viewing screen – these were some of the "anomalies" noted by the Sigur Elephant Corridor Inquiry Committee at a private school in the notified elephant corridor in the Mudumalai Tiger Reserve recently.



Members of the Sigur Elephant Corridor Inquiry Committee at an inspection of a farm-cum-residence in the notified elephant corridor in the Mudumalai Tiger Reserve. SPECIAL ARRANGEMENT

The court-appointed technical committee, headed by retired judge K. Venkatraman, had inspected the school and 40 other locations earlier this week.

The school, which is situated in the buffer zone of the MTR and models itself as a "tribal school", was found to have a few watchtowers, viewing screens and a specially designed shower that activists believe helps attract elephants.

N. Sadiq Ali, founder of the Wildlife and Nature Conservation Trust, stated that when there were calls to capture a wild elephant, known as 'Rivaldo', he and other animal rights activists informed the Forest Department that the school authorities had been responsible in large part for transforming the behaviour of the animal, making it reliant on people for food.

"The Forest Department should investigate the purpose of this infrastructure at the school. Even if there is a slight doubt that animals are being attracted to the area, the school should be asked to remove it," he said. The conservationist said initiatives to attract elephants could bring the animals in close proximity to humans and lead to more negative human-animal interactions.

The Revenue Department says the school encroaches on around 1,200 square metres of revenue land, while the Forest Department has requested the Department of Survey to demarcate government land and see whether it matches with the 'patta' claimed by the school owners. Forest Department officials remained tight-lipped about their findings. They said it was up to the inquiry committee to conclude whether the installation of the infrastructure constituted an offence. The committee inspected 41 locations, including areas which the government says have been encroached upon by private individuals.

Context: All-terrain vehicles, watchtowers, an "elephant" shower to entice pachyderms and a viewing screen inside a building - these were some of the "anomalies" noted by the **Sigur Elephant Corridor Inquiry Committee** in a private school in the notified elephant corridor in the **Mudumalai Tiger Reserve (MTR)** recently**.**

Mudumalai Tiger Reserve (MTR)

- **Location**: Located in the **Nilgiris District** of Tamil Nadu state.
  - It is at the **tri-junction of 3 states** - Karnataka, Kerala and Tamil Nadu.
- **Coverage**: Part of **Nilgiri Biosphere Reserve(Western Ghats)**, **Wayanad Wildlife Sanctuary (Kerala)** in the West, **Bandipur National Park (Karnataka)** in the North, **Mukurthi National Park** and **Silent Valley** in the South.
- **Flagship Species**: Tiger and Asian Elephant.
- **Other species**: Indian Gaur, Spotted Deer, Common Langur, Malabar Giant Squirrel, Wild Dog, Jungle Cat among others.
- **Flora**: Elephant Grass, Bamboo, Teak, Rosewood etc.
- **Birds**: Malabar grey hornbill, Malabar pied hornbill, Malabar laughing thrush among others.
- **Conservation**: It is among the 14 Indian tiger reserves that were awarded the **Conservation Assured | Tiger Standards (CA|TS) status** for effective management of target species.

Sigur Elephant Corridor

- **About**: The corridor is situated in the **ecologically fragile Sigur plateau**, which **connects the Western and the Eastern Ghats** and sustains elephant populations and their genetic diversity.
- **Location**: It is situated near the **Mudumalai National Park** in the Nilgiris district.
  - It has the Nilgiri hills on its southwestern side and the Moyar river valley on its northeastern side.
- **Significance**: The elephants cross the plateau in search of food and water.

BUSINESS STANDARD

Page 1

HYPERLOOP TECHNOLOGY

(Syllabus: GS Paper 3 - Sci & Tech)

In TN, plans afoot to set hyperloop in motion

SHINE JACOB
Chennai, 30 December

Hyperloop technology is still in nascent stages, but an initiative by the Indian Institute of Technology (IIT) Madras, and funded by the Railways, may help India take a lead.

A hyperloop — conceptualised by billionaire Elon Musk — uses magnets to levitate pods inside an airless tube, creating conditions in which the pods can shuttle people, and freight, at 1,000 kmph. Plans are being drawn up for a cargo hyperloop parallel to either the Chennai-Bengaluru railway line, highways connecting the cities, or a line between Chennai and Puducherry.

To test the plan, a 400-metre hyperloop comprising 4-5-metre pods and clocking 250 kmph speed will come up at IIT Madras by June-September 2023. TuTr, a technology start-up incubated by IIT Madras, will lead the hyperloop project. TuTr has signed technology tie-ups with Tata Steel and Daimler and will enter a similar deal with an infrastructure company. The Railways has allocated ₹8.34 crore for the project.

Turn to Page 3



Students and faculty with a hyperloop prototype at IIT Madras

IN THE WORKS

- **Plans being drawn up for cargo hyperloop parallel** to the Chennai-Bengaluru railway line, highways connecting cities, or a line between Chennai and Puducherry
- **₹8.34 crore** allocated by the Railways for the project
- **400-metre hyperloop comprising 4-5-metre pods and clocking 250 kmph speed** will come up at IIT Madras by June-September 2023
- **Second phase** is likely to be on track by 2025

Context: Plans are being drawn up for a cargo **hyperloop parallel** to either the Chennai-Bengaluru railway line, highways connecting the cities, or a line between Chennai and Puducherry.

- To test the plan, a 400 metre hyperloop comprising 45 metre pods and clocking 250 kmph speed will come up at IIT Madras by June-September 2023.

Hyperloop Technology

- **About:** A new mode of **ultra-fast mass transportation** solution that transports people and cargo through a pod in a vacuum environment.
- **Origin**: Theoretical concept of hyperloop is mooted by maverick techno-entrepreneur **Elon Musk in 2013.**
- **Working Mechanism:** Works through the **concept of shooting pods or compartments** of passengers through an airtight tube that is in a partial vacuum.
  - It mainly uses two types of technology- **Magnetic levitation and Air pressure.**
  - The **propulsion** is done through magnetic levitation, with the air capsules or pods gliding or levitating over the tracks.
  - There is very **less friction** between the pods and the tube. Due to this, its speed is so fast that it leaves the maglev train too far behind.
  - A **maglev train system** uses two sets of magnets - one for attracting and moving the train forward along the track, and another for repelling and pushing the train off the track.
- **Advantages**- High speed, noiseless system, time and fuel saving.
- **Challenges**: The magnetic levitation systems have been **hard to build and maintain** due to the cost of maintaining a vacuum.
- **NITI Aayog Expert Committee on Hyperloop Technology**: In 2020, Government think-tank NITI Aayog has formed a high-level panel to explore the technological and commercial viability of the **Virgin Hyperloop technology** for ultrahigh speed travel in India.
  - It explore technological, commercial, financial (viability) feasibility and (assess) safety standards and regulations to procure new technology.
- **Companies Working on Hyperloop**:
  - **Virgin Hyperloop (formerly Hyperloop One)** is one of the best-funded hyperloop projects, giving it the most resources for R&D. It's also leading the pack in patents, and in 2020, it completed the first-ever hyperloop passenger test.
    - In 2020, the **Virgin Hyperloop** has completed the world's first passenger ride on a super-high-speed levitating pod system in the United States.
    - **Maharashtra government** has signed an agreement with Virgin group to build a Hyperloop in 2020.
  - **Hyperloop TT** has a test track in France.
  - In 2020, a consortium of **European and Canadian hyperloop companies** became another big player in the industry.

LIVEMINT Page 13

Lakshadweep bars entry into 17 islands

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The Lakshadweep administration has prohibited entry into 17 of the total 36 islands citing national security and public safety concerns.

The 17 are uninhabited isles of the Union Territory and permission for the entry from the sub-divisional magistrate is required.

The District Magistrate (DM) of Lakshadweep issued a proclamation under Section 144 of the Criminal Procedure Code (CrPC) in this regard. The decision on the proclamation was taken on Wednesday to prevent terrorist or smuggling activities on the uninhabited islands which have temporary structures as houses of labourers who harvest coconuts.

The administration said there could be people among them involving in illegal, anti-social and anti-national activities, hence the decision.

"As there are temporary structures on some uninhabited islands for the purpose of housing labourers to harvest coconuts, it cannot be ruled out that along with these labourers there are persons who engage in illegal, anti-social and anti-national activities such as smuggling, seeking shelter or hideout for hiding weapons or narcotics," the order read.

Considering the possibility of terror groups or organisations attacking and vandalising important and key institutions of the country and crowded places, the order said, precautionary measures were necessary.

LAKSHADWEEP ISLAND
(Syllabus: GS Paper 1 - Geography)

Context: The Lakshadweep administration has prohibited entry into 17 of the total 36 islands citing national security and public safety concerns.

- The 17 are uninhabited isles of the Union Territory and permission for the entry from the sub-divisional magistrate is required.

Lakshadweep

- **About**: A **tropical archipelago of 36 atolls and coral reefs** in the Laccadive Sea, 280 km to 480 km off the coast of Kerala.
  - Lakshadweep means **"one lakh islands" in Malayalam**, the official as well as the widely spoken native language in the territory.
  - The islands were **mentioned in the Buddhist Jataka stories** of the sixth century BCE.
  - According to the **Scheduled Castes and Scheduled Tribes list (Modification Orders), 1956,** the inhabitants of Lakshadweep who and both of whose parents are born in these islands are treated as Scheduled Tribes.
- **Current status:**: 11 are inhabited. But currently, there are 35 islands, as the **Parali 1 island submerged** in water due to sea erosion.
  - These islands were earlier known as **Laccadive, Minicoy, and Amindivi Islands**.
  - The name Lakshadweep was **adopted on 1st November 1973.**
  - Amindivi Islands are the northernmost while the Minicoy island is the southernmost.
  - **8 Degree Channel** (8 degrees north latitude) separates the islands of Minicoy and Maldives.
  - **9 Degree Channel** (9 degrees north latitude) separates the island of Minicoy from the main Lakshadweep archipelago.
- **Geography:** The island is situated in the **Laccadive Sea** extending between 8 degree N and 12 degree N latitude.
  - The entire Lakshadweep islands **group is made up of coral deposits.**
  - The islands consist of **unconsolidated pebbles, shingles, cobbles, and boulders.** All are atolls surrounded by **Fringing Reefs.**
  - These islands are a **part of Reunion Hotspot volcanism.**
  - The topography of the Lakshadweep Islands is **flat and relief features** such as hills, streams, valleys, etc. are absent.
  - The Islands are **extremely vulnerable** to sea-level change as they do not rise more than five meters above sea level.
  - These islands have a **north-south orientation.** Exception: only Androth has an East-West orientation.
  - There is an **absence of forests** in the Island.
- **Largest island**: Minicoy Island (south of the nine-degree channel).
- **UT**: The islands form the **smallest union territory of India** and their total surface area is just 32 km square.
- **Capital**: **Kavaratti** serves as the capital of the Union Territory and the region comes under the jurisdiction of Kerala High Court.
  - It is a uni-district Union Territory.
- **Principal language**: Malayalam, Jeseri (Dweep Bhasha) and Mahl.
- **Most important industry**: Fishing and Coconut cultivation.
  - **Coconut is the only major crop.** The Lakshadweep coconuts are the highest oil content nuts in the world (82 percent).
- **PITTI Island**: This island has been **declared as a bird sanctuary.**
  - Oceanic birds **Tharathasi (Sterna fuscata) and Karifetu (Anous solidus)** are generally found in one of the uninhabited islands known as PITTI.
- **Recent development**: In 2020, the entire Lakshadweep group of islands was declared as an **organic agricultural area** under the Participatory Guarantee System (PGS) of India.

ECONOMIC TIMES

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LCNC PLATFORMS

(Syllabus: GS Paper 3 - Sci & Tech)

Context: US-based technology behemoth Microsoft's offerings in the **low code-no code (LCNC) space a**re likely to be adopted and driven by several IT/Business Process Management solution providers in the country.

'Low-code Tools Helping IT/BPM Fill Talent Gap'

Charles Lamanna of Microsoft says Indian IT/BPM market driving adoption

Romita.Majumdar
@timesgroup.com

Mumbai: US-based technology behemoth Microsoft's offerings in the low code-no code (LCNC) space are likely to be adopted and driven by several IT/Business Process Management solution providers in the country, a senior executive told ET.

The general demand for its LCNC solutions in India is growing on par with global markets as more organisations adopt digital solutions but continue to suffer from a technical talent deficit, said Charles Lamanna, corporate vice president — power platforms group, Microsoft.

LCNC is a set of tools that developers can use to build applications in a visual drag-and-drop interface, including a complete user interface, integrations, data management, and for logic.

Microsoft Power Platform consists of several core components, including Power BI, Power Apps and Power Automate.

Power Apps is a low-code tool which uses pre-built features, business logic and workflow capabilities to digitise processes.

Low code-no code (LCNC) space/platforms

- **About**: Low-code and no-code development platforms are **tools for people** who either do not know how to code or have no time to code.
  - Whereas these low-code and no-code frameworks are **built on actual coding languages** like PHP, Python, and Java, end users are not concerned with the specifics.
  - Instead, they are **given visual software development environments** where they can drag and drop program components, link them, and watch what occurs.
  - In effect, it may be **utilized as a familiar wizard-style paradigm** to build, test, and even deploy apps that are totally focused on simplicity of use.
- **Low-code applications:** These are built **using a visual development environment** with tools like drag-and-drop modelers, smart services, components, and pre-built connectors.
- **No-code development:** It is a type of web development that allows non-programmers and programmers to **create software using a graphical user interface**, instead of writing code.
- **Advantages of LCNC:**
  - Faster Development and Launch Cycle
  - Degree of Freedom
  - Tenancy Extension
  - Promotes Innovation
  - Better customer Experience
  - Lower IT Infrastructure needs
  - Increases Efficiency
  - Efficient Governance
  - Easy to understand
  - Increased Agility

Low Code	No Code
Use for more complex applications	Use for reporting, analytics and tracking apps
Usually for apps that are foundational or run important processes for a business	Apps that evolve with frequent updates and changes in use-case
Apps with: • More than 5 years lifecycle • Fewer updates	Can be integrative or stand alone
Can be mission critical	Good for self-deploying apps
Offers more developer control	Mobile responsive

TIMES OF INDIA

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BIOMINING

(Syllabus: GS Paper 3 - Env & Eco)

Put biomining at Bhalswa on fast track: LG to officials

TIMES NEWS NETWORK

New Delhi: Lieutenant governor of Delhi VK Saxena on Friday inspected the status of biomining work at Bhalswa sanitary landfill.

After the inspection, the LG directed that the bio-mining of 30 lakh MT of legacy waste be completed in the next 15 months instead of 18 months as mentioned in the contract.

While 18 trommel machines were already installed here to process legacy waste, 14 more trommel machines became fully operational for biomining on Friday. "It will help in accelerating biomining work at the site and achieving the target of processing 10,000 tonne per day of legacy waste from January 2023 onwards," said a MCD official.

During his visit, the LG also flagged off 40 trucks with 652 MT of inert, construction and demolition waste and refuse derived fuel (RDF) from Bhalswa. "The material supplied through these trucks will be used by the National Highway Authority of India's construction sites and cement plants," stated the civic body.

MCD officials said that the disposal of RDF, which has been a major challenge, was being taken care of by making agreements with three major cement companies.

MCD has cleared nearly 42 lakh metric tonnes of legacy waste in seven months, claimed the civic body.

Context: Lieutenant governor of Delhi inspected the **status of biomining** work at Bhalswa sanitary landfill.

Biomining

- **About**: The process of u**sing microorganisms (microbes)** to extract metals of economic interest from rock ores or mine waste.
  - Biomining techniques may also be used to **clean up sites that have been polluted with metals.**
- **Basic process**: Valuable metals are commonly bound up in **solid minerals.**
  - Some microbes can **oxidize** those metals, allowing them to **dissolve in water.**
  - This is the **basic process behind most biomining**, which is used for metals that can be more easily recovered when dissolved than from the solid rocks.
  - A **different biomining technique**, for metals which are not dissolved by the microbes, uses microbes to break down the surrounding minerals, making it easier to recover the metal of interest directly from the remaining rock.
  - When the metal of interest is directly dissolved, the biomining process is called "**bioleaching**," and when the metal of interest is made more accessible or "enriched" in the material left behind, it is called "**biooxidation**."
- **Biomined metals**: Most current biomining operations target valuable metals like **copper, uranium, nickel, and gold** that are commonly found in sulfidic (sulfur-bearing)
  - Microbes are especially good at oxidizing **sulfidic minerals,** converting metals like iron and copper into forms that can dissolve more easily.
  - Other metals, like **gold**, are not directly dissolved by this microbial process, but are made more accessible to traditional mining techniques because the minerals surrounding these metals are dissolved and removed by microbial processes.
- **Processes are used to biomine:**
  - **Heap leaching**: **Freshly mined material** is moved directly into heaps that are then bioleached.
  - **Dump leaching**: **low-value ore or waste rock** is placed in a sealed pit and then bio-leached to remove more of the valuable metals from the waste pile.
  - **Agitated leaching:** **crushed rocks** are placed into a large vat that is shaken to distribute the microbes and material evenly and speed up the bioleaching process.
    - **Leaching times vary from days to months,** making this process slower than conventional mineral extraction techniques.
    - **Dump and heap leaching are the oldest** and most established biomining techniques, but the use of **agitated leaching is becoming more common** for minerals that are resistant to leaching, including some copper sulfides like chalcopyrite.

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VTOL DRONE

(Syllabus: GS Paper 3 - Sci & Tech)

Indian Coast Guard Concludes Maiden Contract for 10 Multicopter (VTOL) Drones

Context: In a major boost to Marine Surveillance and Interdiction capabilities, the Indian Coast Guard has concluded maiden contract for **10 multicopter (VTOL) drones** in consonance with Government of India's policy of embracing Drone Technology.

Key Points

- These drones are capable of being **launched from both Ships whilst underway, as well as Shore Stations** and will play a significant role in the reach if ICG unit during Surveillance & Security operations.
- In addition, these drones are going to **assist in Search and Rescue (SAR)**, both by day as well as night.
- The ICG plans to **induct 100 additional drones by 2025,** to meet the ever-growing challenges in India's Maritime Zones and Search & Rescue Region.

Vertical Take-Off and Landing (VTOL) Drones

- **About**: A VTOL drone can **take off, hover around, and land vertically virtually anywhere** without depending on runways.
- **Significance**: These drones help with **mapping, surveying, research, environmental monitoring, and surveillanc**e, among other uses.
- **Operations**: VTOL drones have **varying qualities and features** and are made for specific operations in commercial, consumer, governmental or institutional markets.
    - An example of a VTOL aircraft is a **helicopter or an F35B fighter jet,** which can take off and land from the back of an aircraft carrier.
    - VTOL drones function the same way as these **aerial vehicles.**
    - The taking-off methods may determine how VTOL drones work because some VTOL drones use **short take-off and landing (STOL)**, while others employ a conventional take-off and landing (CTOL) mode of flight.
    - Other VTOL drones use the **short take-off and vertical landing (STOVL) flight mode.**
    - Regarding the **propulsion system**, VTOL drones use different propelling methods like lithium batteries, solar energy, hydrogen fuel cells, and gasoline. However, some drones can use two power sources in one flight.
- **Hybrid VTOL:** These drones are drones that can **employ two different components**, such as fixed wings and vertical rotors.
    - The **VTOL fixed-wing drone** is especially flexible for many military aerial and commercial applications.
- **eVTOL Aircraft:** An eVTOL aircraft is one that **uses electric power** to hover, take off, and land vertically.
    - Most eVTOLs also use what is called as **distributed electric propulsion technology** which means integrating a complex propulsion system with the airframe.

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CPI-IW

(Syllabus: GS Paper 3 - Economy)

Consumer Price Index for Industrial Workers (CPI-IW) for November 2022 released

Context: The A**ll-India CPI-IW for November, 2022** remained stationary at 132.5 (one hundred thirty two point five).

- On 1-month percentage change, it remained static between October, 2022 and November, 2022 when compared to an increase of 0.64 percent recorded between corresponding months a year ago.

CPI for Industrial Workers (CPI-IW)

- It tries to **measure the alterations over a time period** on the prices of a fixed basket of goods and services utilised by Industrial Workers.
- The **target group would be an average working-class family** from any of these seven sectors of the economy ranging from factories, mines, plantation, motor transport, port, railways to electricity generation and distribution.
- The **Labour Bureau, an attached office of the Ministry Labour and Employment,** has been compiling Consumer Price Index for Industrial Workers every month on the basis of retail prices collected from 317 markets spread over 88 industrially important centres in the country.
- The index is **compiled for 88 centres and All-India** and is released on the last working day of succeeding month.

Consumer Price Index

- **Index Measurement**: It measures price changes from the perspective of a retail buyer.
  - The CPI **calculates the difference in the price of goods and services** such as food, medical care, education, electronics etc, which Indian consumers buy for use.
- **Released by:** the National Statistical Office (NSO) in the Ministry of Statistics and Programme Implementation.
- **Four types of CPI are as follows:**
  - **CPI for Industrial Workers (IW)**: compiled by the Labour Bureau in the Ministry of Labour and Employment.
    - Recently, the Ministry of Labour and Employment released the new series of Consumer Price Index for Industrial Worker (CPI-IW) with base year 2016.
  - **CPI for Agricultural Labourer (AL):** compiled by the Labour Bureau in the Ministry of Labour and Employment.
  - **CPI for Rural Labourer (RL):** compiled by the Labour Bureau in the Ministry of Labour and Employment.
  - **CPI (Rural/Urban/Combined)**: compiled by the NSO.
- **Base Year:** 2012.
- **Significance**: The Monetary Policy Committee (MPC) uses CPI data to control inflation.
  - In April 2014, the **Reserve Bank of India (RBI) had adopted the CPI as its key measure of inflation.**

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ACHARYA JAGADISH CHANDRA BOSE BOTANIC GARDEN

(Syllabus: GS Paper 3 - Env & Eco)

Bengal green activist urges PM Modi to save country's oldest botanical garden from Ganga erosion

The prime minister cleared Rs 2,550 crore to augment Ganga-bound sewage in Bengal; no funds to stop Ganga erosion

By Jayanta Basu
Published: Friday 30 December 2022



Context: A West Bengal-based environmentalist has urged PM to take immediate action for saving the **Acharya Jagadish Chandra Bose Botanic Garden** in Howrah.

Acharya Jagadish Chandra Bose Botanic Garden

- **About**: The Acharya Jagadish Chandra Bose Indian Botanic Garden was previously known as the **Indian Botanic Garden and the Calcutta Botanic Garden.**
- **Location**: It is situated in **West Bengal's Howrah,** near Kolkata.
- **Origin**: The garden was **founded in 1787 by an army officer of East India Company** mainly to identify new plants having a commercial value like teak and grow the species for trading purposes.
- **Nodal Agency**: It comes under the control of the **Botanical Survey of India (BSI),** which comes under the aegis of the **Union Ministry of Environment, Forest and Climate Change.**
    - While the garden comes under the jurisdiction of the BSI, the **Kolkata Port Trust (KPT)** has the jurisdictional command over the length of the Ganges from Farakka to Ganga Sagar.
- **Biodiversity**: It hosts **wide range of rare plants,** with the number of species collection reaching over 12,000 spanning across 109 hectares of land.
    - This botanical garden is considered to be the **"largest man-made Plant Kingdom".**
    - The famous attraction of this botanical garden is **The Great Banyan**, which is known for being the largest tree in the world.
    - It also hosts a large collection of orchids, bamboos, palms, and plants of the screw pine genus (Pandanus).
    - It houses fauna like **Jackal (Canis aureus), Indian mongoose and the Indian Fox** (Vulpes bengalensis).
- **Threat**: Acharya Jagadish Chandra Bose Indian Botanic Garden - **India's largest botanical garden** - is currently under threat because of **severe land erosion by River Ganga.**
    - The river has **encroached into 200 meters of the garden's southern side.** Several trees that are close to the river have already collapsed or are on the verge of collapse because of severe soil erosion.

List of prominent Gardens in India

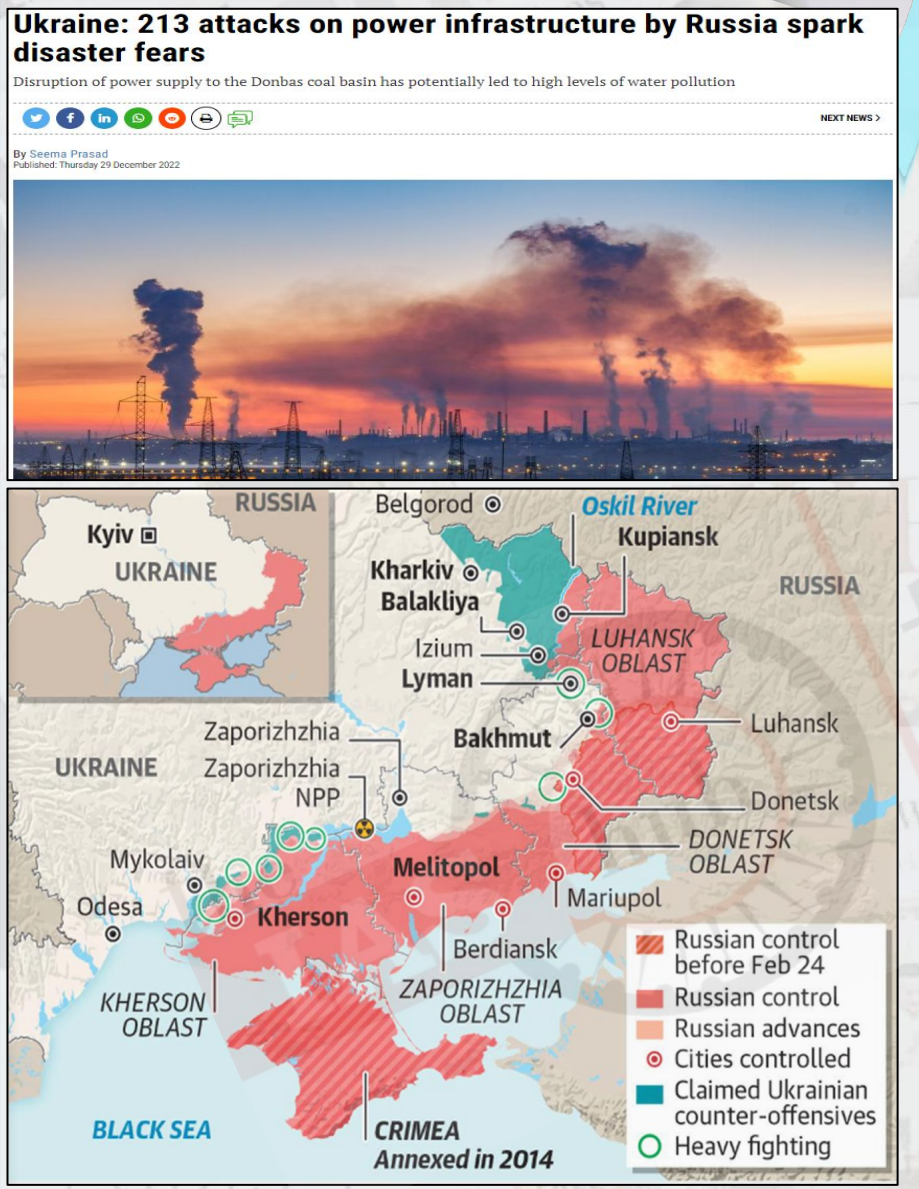
- Auroville Botanical Gardens – Auroville, Tamil Nadu
- Sim's Park – Coonoor, Tamil Nadu
- Government Botanical Garden – Ooty, Tamil Nadu
- Lloyd's Botanical Garden – Darjeeling, West Bengal
- Rock Garden – Darjeeling, West Bengal
- Brindavan Garden – Mysore, Karnataka
- Pilikula Botanical Garden – Mangalore, Karnataka
- Lal Bagh Botanical Garden – Bangalore, Karnataka
- Malampuzha Garden – Palakkad, Kerala

DTE

Dec 31

MILITARY ACTIONS ON UKRAINE

(Syllabus: GS Paper 2 - International Relations)



Context: As many as 213 incidents of military actions on energy infrastructure such as thermal power plants, nuclear power plants and electricity substations were reported in **Ukraine since Russia's invasion** on February 24, 2022, a new study found.

Key points

- Ukraine has **16 thermal power plants, 49 combined heat and power plants**, three hyperaccumulating power plants and eight hydropower plants.
- The country also has four operational nuclear power plants with 15 reactors.
- Of the 15 nuclear reactors in Ukraine, **six reactors are at the Zaporizhzhia Nuclear Power Plant,** which is Europe's largest nuclear power plant.
    - The largest number of incidents occurred in the **Zaporizhzhia, Donetsk, Kharkiv, Dnipropetrovsk, Kyiv and Mykolaiv regions.**
- **Europe's largest coke plant, the Avdiivka coke** plant, located in Donbas, is the main producer of coke in Ukraine.
    - After the invasion, the transport channels, including the railway connections and conveyor tracts that move raw materials were destroyed.



THANK YOU!

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