UPSC CURRENT AFFAIRS NOTES 23-01-2024

EXERCISE CYCLONE

The Indian Army contingent reached Egypt to take part in the 2nd edition of India-Egypt Joint Special Forces Exercise CYCLONE.

Details

The Exercise will be conducted at **Anshas, Egypt** from 22nd January to 1st February 2024.

The first edition of the exercise was conducted last year in India.

The Indian Army contingent consists of 25 personnel from The Parachute Regiment (Special Forces).

The Egyptian contingent comprises 25 personnel from the Egyptian Commando Squadron and Egyptian Airborne Platoon.

The primary aim is to familiarize both sides with each other's operating procedures, particularly in the context of Special Operations in desert/semi-desert terrain under Chapter VII of the United Nations Charter.

Phases of the Exercise

First Phase: Military Exhibitions and Tactical Interactions

Second Phase: Training on Improvised Explosive Device (IED), counter IED, and Combat First Aid

Third Phase: Joint Tactical Exercise based on Fighting in Built-up Area and Hostage Rescue Scenarios

Significance

Military Cooperation: The joint exercise provides a platform for the Indian and Egyptian special forces to collaborate and share best practices in various aspects of military operations.

Tactical Training: The focus on special operations in challenging terrains and scenarios such as urban warfare and hostage rescue demonstrates the commitment to enhancing the tactical capabilities of both contingents.

Bilateral Relations: Beyond the military aspect, the exercise is expected to contribute to the overall strengthening of bilateral relations between the two nations.

PRADHAN MANTRI SURYODAYA YOJANA

The Pradhan Mantri Suryodaya Yojana, launched by the Prime Minister, aims to install solar power systems on the rooftops of residential buildings, with a specific target of covering 1 crore (10 million) houses across India.

Key Highlights

The primary goals of the scheme include reducing electricity bills for the poor and middle class while contributing to India's self-reliance in the energy sector.

By encouraging widespread adoption of solar power at the household level, the **government aims to boost renewable energy usage and decrease reliance on traditional energy sources.**

India's Current Solar Capacity

As of December 2023, India's total solar capacity stands at approximately 73.31 gigawatts (GW), with rooftop solar contributing around 11.08 GW. This solar capacity is distributed across states, with Rajasthan leading in

total solar capacity (18.7 GW) and Gujarat topping the list in rooftop solar capacity (2.8 GW).

Solar power plays a significant role in India's total renewable energy capacity, which stands at around 180 GW. The country's commitment to renewable energy is evident in its efforts to achieve ambitious targets, aiming for 500 GW of renewable energy capacity by 2030**.**

Importance of Solar Energy Expansion

India is expected to experience **the largest energy demand growth** globally over the next 30 years, according to the International Energy Agency (IEA). To meet this increasing demand, a reliable and sustainable source of energy is crucial, necessitating a shift away from traditional sources like coal.

While India has increased its coal production, it is also committed to reaching 500 GW of renewable energy capacity by 2030. Solar energy, in particular, has seen significant growth, rising from less than 10 MW in 2010 to 70.10 GW in 2023.

Rooftop Solar Programme

Launched in 2014, the Rooftop Solar Programme focuses on expanding rooftop solar installed capacity in the residential sector. It provides Central Financial Assistance and incentives to distribution companies (DISCOMs).

The programme's goal is to achieve 40 GW of rooftop solar installed capacity by March 2026. Noteworthy progress has been made, with rooftop solar capacity increasing from 1.8 GW in March 2019 to 10.4 GW in November 2023.

Consumers can benefit from the scheme through DISCOM tendered projects or the National Portal (www.solarrooftop.gov.in). The scheme empowers consumers to choose vendors and solar equipment based on their preferences. After installation and inspection, subsidies are directly transferred to consumers' bank accounts.

Consumers have the opportunity to export surplus solar power to the grid, receiving monetary benefits in accordance with prevailing regulations set by State Electricity Regulatory Commissions (SERCs) or Joint Electricity Regulatory Commissions (JERCs).

Pradhan Mantri Suryodaya Yojana

To promote the adoption of rooftop solar systems in India, the Prime Minister announced the Pradhan Mantri Suryodaya Yojana (PMSY).

The PMSY is a government scheme that aims to install rooftop solar systems in 1 crore (10 million) households across the country.

Features

The scheme will target low and middle-income households who can benefit from reduced electricity bills and additional income from surplus electricity generation.

The scheme will provide financial assistance to eligible households in the form of subsidy, loan or incentive, depending on their category and location.

The scheme will also provide technical assistance to the households in terms of installation, operation and maintenance of the rooftop solar systems.

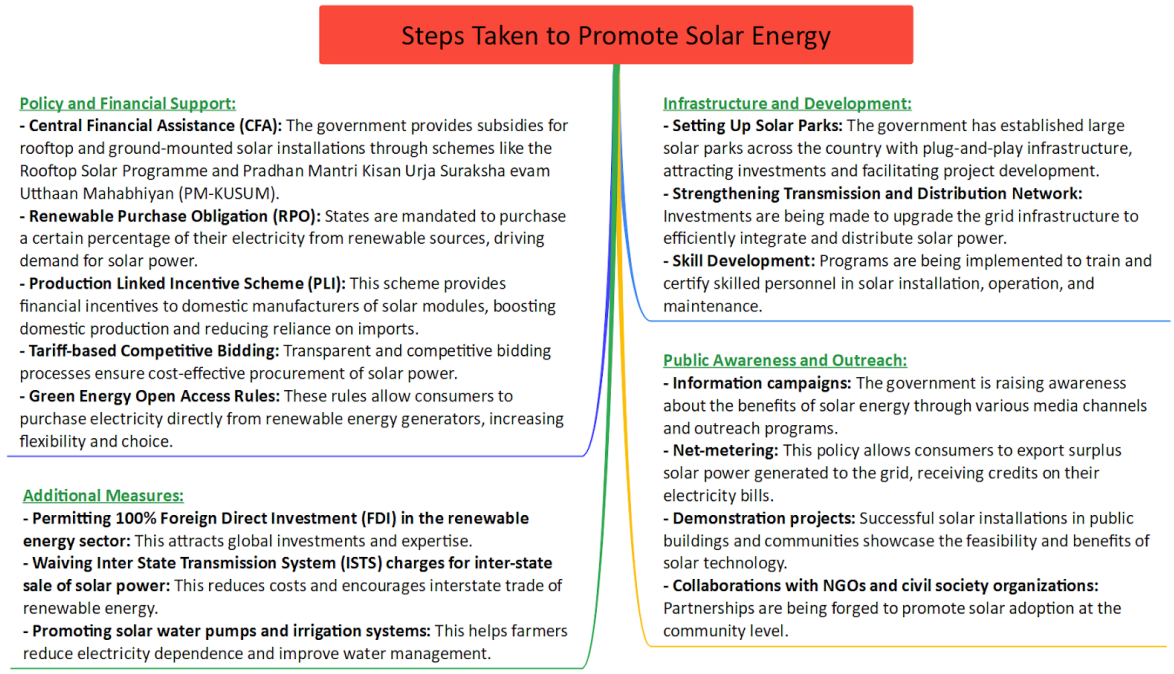
The scheme will be implemented by the Ministry of New and Renewable Energy (MNRE) in collaboration with state governments, distribution companies, banks and other stakeholders.

Significances

The scheme will also help India meet its commitment under the Paris Agreement to reduce its emissions intensity by 33-35% by 2030 from 2005 levels.

The scheme will contribute to India's vision of becoming self-reliant (aatmanirbhar) in the energy sector by reducing its dependence on imported fossil fuels and enhancing its energy security.

The scheme will also support India's social and economic development by providing clean and affordable electricity to millions of households, especially in rural and remote areas where grid access is limited or unreliable.



Challenges in scaling up rooftop solar in the country

- Lack of awareness and information among consumers about the benefits and procedures of rooftop solar installation.
- High upfront cost and lack of easy financing options for consumers to invest in rooftop solar systems.
- Regulatory hurdles and policy uncertainties regarding net metering, grid connectivity, tariff structure, etc. vary across states and regions.
- Technical issues such as poor quality of equipment, installation and maintenance services, grid integration and management, etc. affect the performance and reliability of rooftop solar systems.

Way forward

Increasing awareness and outreach among consumers through mass media campaigns, workshops, exhibitions, etc. that showcase the benefits and success stories of rooftop solar.

Providing financial incentives and subsidies to consumers, especially low and middle-income households, to reduce the upfront cost and payback period of rooftop solar systems.

Streamlining and harmonizing the regulatory and policy framework across states and regions to ensure uniformity, clarity and stability for rooftop solar installation and operation.

Improving the technical standards and quality control of rooftop solar equipment, installation and maintenance services, grid integration and management, etc. to ensure safety, efficiency and durability of rooftop solar systems.

The Pradhan Mantri Suryodaya Yojana is a welcome initiative by the government to boost the adoption of rooftop solar in India. The scheme can help India achieve its renewable energy targets and climate goals, as well as enhance its energy security and social and economic development. However, the scheme also faces several challenges that need to be addressed through effective implementation and coordination among various stakeholders. If done well, the scheme can usher in a new dawn for India's solar energy sector and make every household a part of the sun's power.

Parakram Diwas

The Prime Minister of India has extended greetings to the people of India on Parakram Diwas.

About Parakram Diwas

It is celebrated on **January 23** to commemorate the birth anniversary of freedom fighter Subhas Chandra Bose.

This year marks the 127th birth anniversary of Bose, fondly known as ‘Netaji’.

Parakram Diwas aims to instil fearlessness and patriotism, especially among the youth, inspiring them to stand strong in the face of challenges.

Key points about Subhas Chandra Bose

He was born on January 23, 1897, in Cuttack, Orissa.

In 1920, he passed the civil service examination, but in April 1921, after hearing of the nationalist turmoil in India, he resigned from his position.

He was an Indian nationalist leader who was a key figure in the Indian independence movement against British colonial rule.

Bose then joined the Indian National Congress and actively participated in the Indian independence movement.

President of Indian National Congress: Bose was elected president of the Indian National Congress for two consecutive terms but resigned from the post following ideological conflicts with Mahatma Gandhi.

In 1939, he formed the Forward Bloc, an organization aimed at unifying all the anti-British forces in India.

At the outset of the Second World War, he fled from India and travelled to Soviet Union, Germany and Japan, seeking an alliance with the aim of attacking the British in India.

With Japanese assistance, he reorganized and later led the Indian National Army, formed from Indian prisoners-of-war and plantation workers from Malaya, Singapore, and other parts of Southeast Asia, against British forces.

Also, with Japanese monetary, political, diplomatic, and military assistance, he formed the Azad Hind Government in exile, and regrouped, and led the Indian National Army in battle against the allies at Imphal and in Burma.

Exercise Khanjar

Recently, India-Kyrgyzstan Joint Special Forces Exercise KHANJAR has commenced at the Special Forces Training School in Bakloh, Himachal Pradesh.

About Exercise Khanjar

It was first initiated in December 2011, in Nahan, India.

It is the 11th edition of India-Kyrgyzstan Joint Special Forces Exercise.

It is an annual event conducted alternatively in both the countries.

The Indian Army contingent comprising 20 personnel is being represented by troops from The Parachute Regiment (Special Forces) and the Kyrgyzstan contingent comprising 20 personnel is represented by Scorpion Brigade.

Aim of the exercise is to exchange experiences and best practices in Counter Terrorism and Special Forces Operations in Built-up Area and Mountainous Terrain under Chapter VII of United Nations Charter.

The exercise will emphasise on developing Special Forces skills, advanced techniques of insertion and extraction.

The exercise will provide an opportunity for both sides to fortify defence ties while addressing common concerns of international terrorism and extremism.

The exercise will also accord the opportunity to showcase capabilities of cutting-edge indigenous defence equipment besides achieving shared security objectives and foster bilateral relations.

WULAR LAKE

The Wular Lake has got around four to five lakh migratory birds so far this winter, including seven new species.

Wular Lake, also known as **Wolar** in Kashmiri, is one of the largest fresh water lakes in South Asia and the lake is one of the 75 Indian wetlands designated as a Ramsar site in 23 March 1990.

Ancient name and historical importance: In ancient times, Wular Lake was also called Mahapadmasar. The Kashmiri sultan Zain-ul-Abidin is reputed to have ordered the construction of the artificial island of Zaina Lank in the middle of the lake in 1444.

Location: It is located near Bandipora town in the Bandipora district of Jammu and Kashmir, India.

Formation: The lake basin was formed as a result of tectonic activity and is fed by the Jhelum River as primary source and stream Madhumati and Arin.

Flora and Fauna

Fish: Wular Lake is an important fish habitat, Fish from Wular Lake make up a significant part of the diet for many and more than eight thousand fishermen earn their livelihood from the lake, primarily fishing for the endemic Schizothorax species and the non-native carp.

Birds: The lake sustains a rich population of birds. Terrestrial birds observed around the lake include the black-eared kite, Eurasian sparrowhawk, short-toed eagle, Himalayan golden eagle, Himalayan monal, chukar partridge, koklass pheasant, rock dove, common cuckoo, alpine swift, Indian roller, Himalayan woodpecker, hoopoe, barn swallow, golden oriole and others.

Migratory Birds: (Recent development) According to official Census figures the arrival of migratory birds ranged between eight to 12 lakh in 2022-23 and 11 to 12 lakh in 2021-22**.**

In past 12 months, the clean waters of the lake has even attracted some rare species, such as Falcated Duck, Horned Grebe, Western Reef Heron, Smew Duck, Long-tailed Duck, Pacific Golden Polover and the Broad-billed Sandpiper.

Environmental threats

Illegal change of its use by converting large parts of the lake's catchment areas into agricultural land and infestation of weeds that have hidden the lake waters and considerably shrunk it

Tulbul Project:

Dispute: The Tulbul Project is a "navigation lock-cum-control structure" at the mouth of Wular Lake. There has been an ongoing dispute between India and Pakistan over the Tulbul Project since 1987, when Pakistan objected that it violated the 1960 Indus Waters Treaty (IWT). India stopped work on the project that year, but has since pressed to restart construction.

A23a ICEBERG

World's biggest iceberg battered by waves as it heads north.

Details

A23a Iceberg

A23a first broke off the Antarctic coast in 1986, making it the world's oldest iceberg as well as its largest.

Size: The tooth-shaped iceberg named A23a is nearly 4,000 sq. km across, making it more than twice the size of Greater London. It contains an estimated one trillion tonnes of freshwater that is likely to melt off into the ocean along the way.

Movement:

It was then stuck on the sea bed for many years but then started moving in 2020. Its area is about 3,900 square kilometres (1,500 sq mi), which made it one of the largest icebergs in the world until it was temporarily surpassed in size by A76.

In 2023, A23a broke free from its icy shackles and started venturing north.

After three decades stuck to the Antarctic ocean floor, A23a is now heading north on what could be its final journey.

The iceberg, which is up to 400 metres thick in places, is currently drifting between Elephant Island and the South Orkney islands.

Whether or not this was caused by climate change — winter Antarctic sea ice reached its lowest level on record last year — remains an open question.

But he emphasised such icebergs are “part of a huge system that is changing dramatically”.

As the iceberg is “ejected out into the Southern Ocean”, warmer waters and bigger waves will start to break it up.

In Antarctica the annual loss amounts to only one ten-thousandth of its mass, so the ice sheet is an enormous passive reservoir. However, if losses from iceberg calving and ice-shelf melting are greater than gains from snowfall, global sea levels will rise.

THCBD

Researchers at the CSIR-Indian Institute of Integrative Medicine (IIIM) in Jammu, India, have identified a compound derived from cannabis that exhibits potent antibiotic properties against Staphylococcus aureus, a major cause of antibiotic-resistant infections.

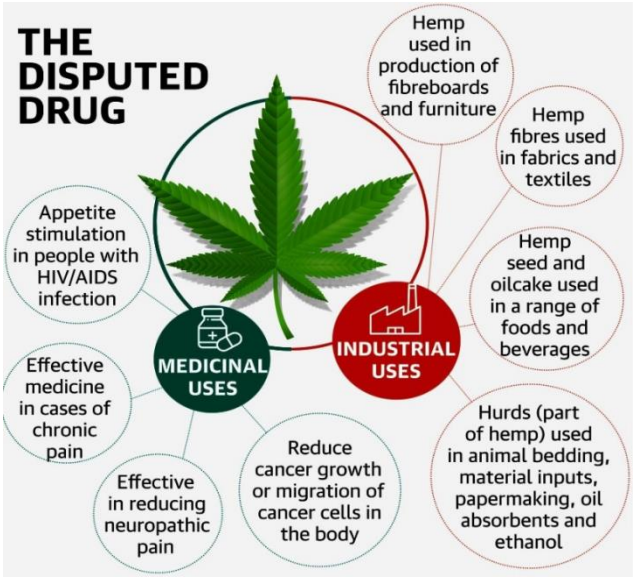
Details

- Researchers at the CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu, have discovered that a **compound called tetrahydrocannabidiol (THCBD) found in cannabis possesses antibiotic properties.**
- This finding is significant in the context of the escalating threat of antibiotic resistance, a major global health concern.

- **The study focused on the antibiotic effects of THCBD against Staphylococcus aureus**, a bacterium responsible for a high number of deaths due to antimicrobial resistance (AMR).

Key Points

- **Antibiotic Resistance (AMR) occurs when bacteria, viruses, fungi, and parasites no longer respond to medications used to treat them**, leading to increased risks of disease spread, severe illness, and death.
- CSIR-IIIM Jammu researchers focused on the antibiotic properties of THCBD, a **phytocannabinoid found in the cannabis plant.**
- THCBD demonstrated **potent antibiotic effects against Staphylococcus aureus, specifically the methicillin-resistant strain (MRSA), which is resistant to the last line of antibiotics**. The compound showed effectiveness against efflux pump overexpression and MRSA strains.
- THCBD was obtained through a process where cannabidiol extracted from a cannabis plant reacted with hydrogen, using palladium as a catalyst.
- **THCBD was found to be effective in bacterial cultures in the lab**. It significantly reduced the number of viable microbial cells of Staphylococcus aureus skin infections in mice.
- The study is seen as an exciting development in the fight against AMR and opens up possibilities for new therapeutics. Collaboration efforts and government authorization are being sought to expedite research progress.



Conclusion

The discovery of THCBD in cannabis as a potential antibiotic offers a promising avenue for combating antibiotic resistance. The study emphasizes the need for further research, collaboration, and policy changes to harness the benefits of cannabis compounds in addressing global health challenges.