Topics - MINDS MAPS included

- What is the Chandipura virus
- - Microplastic in PCP
- (Perform, Achieve, and Trade (PAT)
- What is Emission Trading?
- SME Platforms of Stock Exchanges
- Chips Act
- -I2U2 Partnership
- Olive Farming in Greece Mains







Target Mains -2024/25 -

Q In the era of anthropocene without Agriculture diversification food security cannot be ensured. Examine

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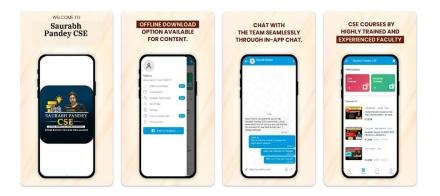


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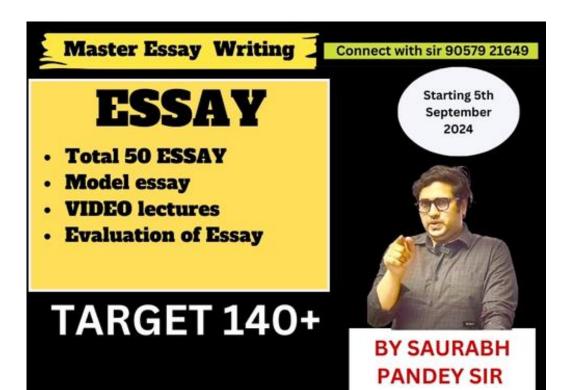


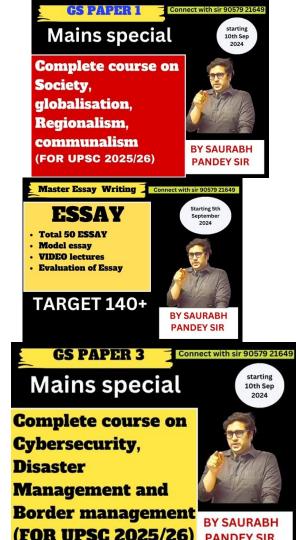


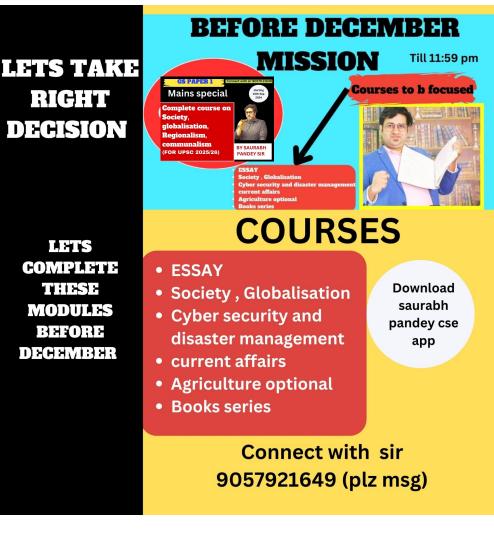
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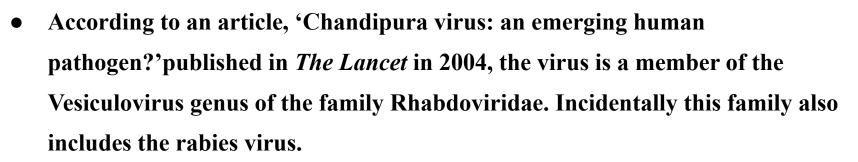
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Topic - What is the Chandipura virus?



- The Chandipura virus, the paper states, was first isolated in 1965, from the blood of two adults with a febrile illness in a village in Nagpur, Maharashtra.
- The virus is reportedly named after the village it was isolated from.
- The other instance when the virus was isolated in human beings was in 1980, in Madhya Pradesh from a patient with acute encephalitis, the article says.

How is it transmitted?

- The virus is vector-borne, with the likely vector believed to be the female *Phlebotomine* sandfly, insects that are prevalent in the early monsoon period.
- A 2016 paper, 'Changing clinical scenario in Chandipura virus infection', published in *The Indian Journal of Medical Research*, also pointed to the role of *Sergentomyia* sandflies.
- It said several species of mosquitoes replicated and transmitted the virus experimentally, and among the different mosquito species studied, *Aedes aegypti*, (which also transmits dengue), was found to be highly susceptible and could transmit the virus more efficiently than others, under laboratory conditions.
- However it said no isolation of the virus from the mosquito had been reported as of then.





Topic- Microplastic in PCP

- Personal care products (PCP) like face wash and shower gels in India contain a significant amount of harmful microplastics.
- polyethylene (PE) is the dominant polymer in microplastic emissions from PCPs.
- Microplastics are plastic particles are under 5 mm in size; microbeads have a diameter under 5 mm in diameter



- According to the researchers, white microbeads are more easily concealed in PCP.
- These orb-like particles are used as exfoliating agents and to enhance the delivery of active ingredients in the PCP.
- Microbeads are small, solid, manufactured plastic particles that are less than 5mm in diameter and do not degrade or dissolve in water
- They are made of PE, polypropylene or and polyester.
- PE was present in the highest concentration in more than half the microbeads.



- Microplastics have also been found in the human brain, blood, lungs, colon, placenta, testicles, and stool.
- The study paper advocated for better policies to control microplastic pollution in India and suggested coffee, apricots, walnut, kiwi seeds, and soluble cellulose beads could replace microbeads in PCPs.



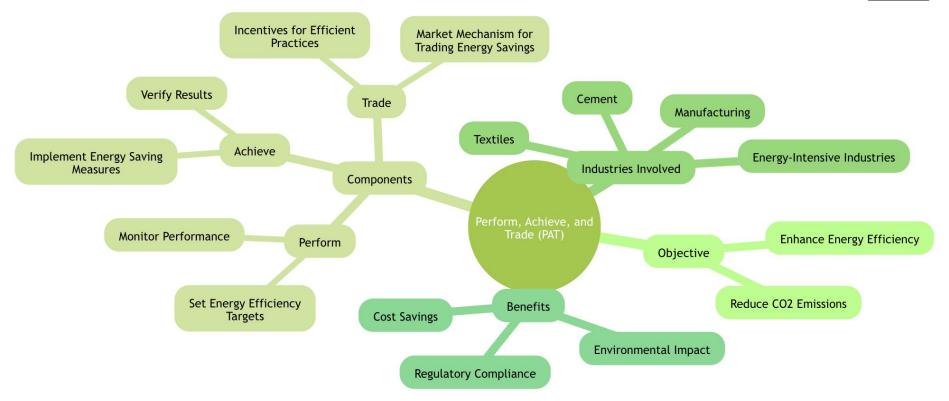
Topic-Overview of PAT (Perform, Achieve, and Trade (PAT)

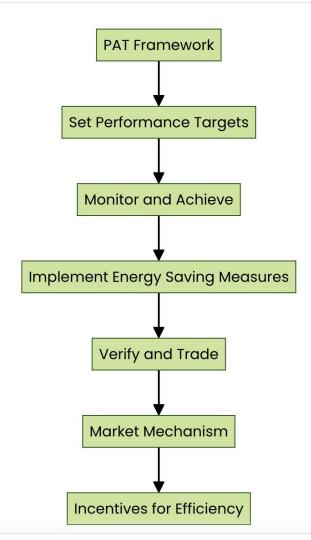
Definition: PAT is a regulatory framework aimed at enhancing energy efficiency in industries.

Purpose: Reduce specific energy consumption in energy-intensive sectors.

Key Components: Performance targets, achievements, and trading of energy savings.







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Understanding Emission Trading

Emission Trading: A market-based approach to control pollution by providing economic incentives.

Carbon Credits: Permits that represent the right to emit a specific amount of CO2 or equivalent gases.

Cap-and-Trade System: Limits (cap) the total level of greenhouse gas emissions and

allows industries with low emissions to sell their extra allowances.



Key Components

Regulatory Framework: Government establishes laws and limits for emissions.

Market Dynamics: Supply and demand for carbon credits determine prices.

Compliance: Companies must monitor and report their emissions.

Benefits



Cost-Effective Solutions: Encourages reductions at the lowest cost. Innovation: Stimulates new technologies for reducing emissions. Global Impact: Facilitates international cooperation on climate change.

Challenges

Market Volatility: Prices can fluctuate significantly. Verification Issues: Ensuring accurate reporting can be difficult. Equity Concerns: Potential disproportionate impacts on vulnerable communities.





Analysis -- PAT AND EMISSION TRADING

- India needs iron and steel for industrialisation, especially given the massive housing demand in urban centres with a rising population.
- Emissions from iron and steel production are big contributors to climate change. In the context of a Net Zero Emissions scenario by 2050, the International Energy Agency (IEA) says in a policy brief that the signs of the announced iron and steel projects meeting net zero emissions is very low.



- nationally determined contributions (NDCs), at the heart of the Paris Agreement 2015.
- It is legitimate that India re-arranges or improves upon its existing PAT scheme or devises its version of carbon market mode within the boundaries of its NDCs. India's NDC consists of eight targets, two of which relate to the energy sector.
- The \Box first is to reduce emissions intensity of its GDP by 45% below the 2005 levels by 2030. The second is to achieve about 50% cumulative electric power installed capacity from non-fossil fuel-based energy sources by 2030, subject to international \Box finance and technology transfer.
- Since India does not have binding greenhouse gases reduction targets compared to a baseline year in pursuance of its NDCs, it is likely that it will have its own version of the carbon market, different from the European Union Emissions Trading System (ETS).



- India has not taken a formal stand on ETS and has refused mandatory emission cuts.
- At this stage, ETS will be in conflict with India's development priorities.

• As per the IEA policy brief, "it will include updating emissions measurement methodologies to support the launch of a domestic carbon credits trading scheme from 2026, which will include the iron and steel sector, alongside other industry sectors such as petrochemicals, chemicals, and aluminium".



- The 2021 draft blueprint presented by the Bureau of Energy Efficiency envisages two mechanisms: in the
 first phase, a voluntary market supported by a domestic project-based offset scheme (carbon offset mechanism);
- and in the second, a compliance market with mandatory participation for regulated entities (carbon credits trading mechanism).

Mapping -

A limited advance

As of August 19, according to Ukraine President Volodymyr Zelenskyy, his forces were in control of 92 settlements in Kursk and 1,250 square kilometres of Russian territory







Topic-SME Platforms of Stock Exchanges

Overview

Definition: Platforms dedicated to listing and trading the shares of Small and Medium Enterprises (SMEs). Importance: Enable SMEs to raise capital and provide investors with opportunities.



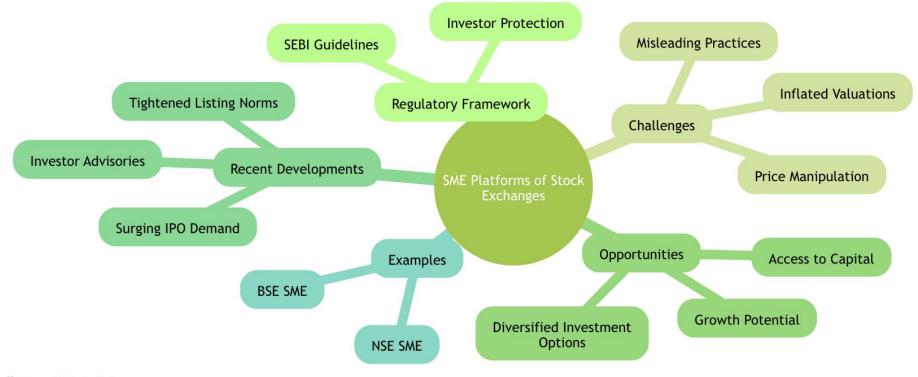


figure 1.2: table



Topic- Chips Act

Overview of the Chips Act

Objective: Promote semiconductor manufacturing in the U.S. Selection Funding: Billions allocated to support chip manufacturing and research

Impact: Strengthening supply chains and reducing dependence on foreign semiconductors 🔗



Key Aspects of the Chips Act

- **Federal Support**
 - Funding for new facilities 🏭
 - Grants and incentives for companies to invest in U.S.
 - manufacturing 💼

Industry Response

- Major players like Intel and HP involved
- Expansion plans and new projects announced

- International Context
 - Comparison with initiatives in Europe and China 🌍
 - Global competition for semiconductor dominance 📈



Challenges and Opportunities

Challenges

- Technical hurdles in chip production 🔆
- Competition from established foreign manufacturers

Opportunities

- Job creation in the tech sector 🧖
- Innovation in semiconductor technology 💡





Future Directions

Long-Term Goals

Achieving semiconductor independence 🗾 Developing next-generation chip technologies 🔮

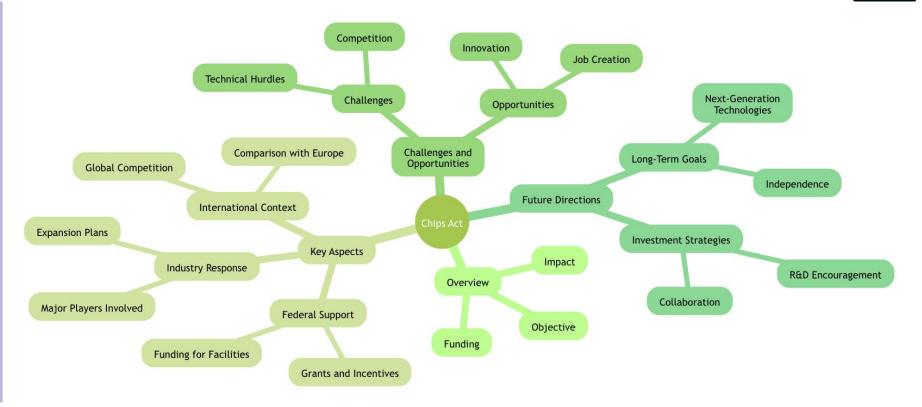
Investment Strategies

Fostering collaboration between government and industry 🤝

Encouraging research and development in semiconductor fields 🔬







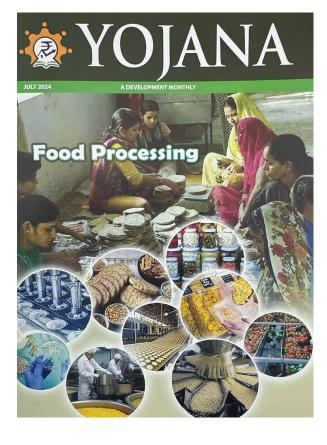
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Topic -I2U2 Partnership

Overview

I2U2: A partnership between India, Israel, the UAE, and the U.S.

Focus on tackling global challenges and promoting economic opportunities.

Formed to enhance collaboration on various projects.



Key Areas of Focus:

Clean Energy: Hybrid renewable energy projects. Technological Innovation: Leveraging Israeli and American technologies. Investment Mobilization: Capital from the UAE. Infrastructure Development: Enhancing regional cooperation







Topic- Olive Farming in Greece

Overview

(Cultural Significance) (Economic Importance) (Climate Challenges)

Key Points:

Greece is known for its high-quality olive oil. Olive farming is a significant part of Greek culture and economy. Recent climate changes are affecting yields and quality.



Challenges in Olive Farming

(Climate Change) (Dismal Harvests) (Economic Strain) ३ **Key Points:**



Changes in weather patterns affect crop production. Farmers are facing lower yields and increased costs. The rising prices of olive oil can negatively impact the industry.

Technological Innovations (GPS Tracking) 📡 (Sustainable Practices) 🌿

SAURABH PANDEY EXURABH PANDEY EXURABLE SAURAMENT

Key Points:

- Farmers are using technology to prevent theft and monitor crops.
- There is a shift towards more sustainable farming practices.
- Innovations are necessary to cope with environmental changes.

Future Prospects

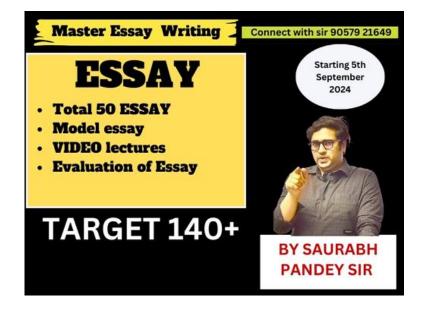
(Market Trends) (Consumer Preferences) (Policy Support) m

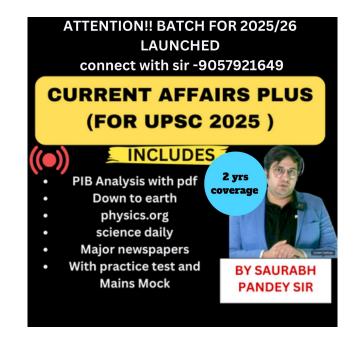


Key Points:

- The olive oil market is expected to face fluctuations due to climate impact.
- Consumers are leaning towards organic and sustainably sourced products.
- Government policies could play a crucial role in supporting farmers.









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