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"WHY INDIA LOST 6 MILLION TREES MERELY IN JUST THREE YEARS"

THIS ARTICLE COVERS "DAILY CURRENT AFFAIRS" AND THE TOPIC DETAILS OF "WHY INDIA LOST 6 MILLION TREES MERELY IN JUST THREE YEARS" THIS TOPIC IS RELEVANT IN THE "ENVIRONMENT AND ECOLOGY" SECTION OF THE UPSC-CSE EXAM.

WHY IN THE NEWS?

Researchers at the University of Copenhagen, Denmark, published a report that revealed that India has lost over 5.8 million full-grown trees in agricultural lands, according to a satellite imagery-based analysis.

INFORMATION REVEALED BY THE REPORT:

- 11% of the trees mature trees no longer visible that were detected by the satellite between 2010-11 additionally.
- Many parts of the country where the disappearance of mature farmland trees.
- Loss of farmland trees varies from 5 to 10%, except for areas in central India, in particular in the States of Telangana and Maharashtra, where massive losses of large trees are observed.
- Several hotspot areas have lost up to 50% of their large farmland trees, with up to 22 trees per square kilometre disappearing.
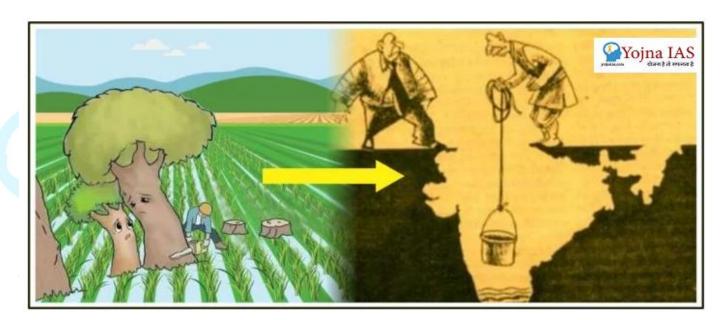- In eastern Madhya Pradesh around Indore where smaller hotspot areas of loss are also observed.

METHODS USED BY THE RESEARCHERS FOR THE ANALYSIS:

- Researchers combined satellite-imagery from two repositories — **RapidEye and PlanetScope** to find out change in the tree number from 2010 to 2022.
- The repositories have resolutions of three to five metres, meaning that the satellite can "see" large trees, three to five metres apart, as individual trees.
- Trees detected by RapidEye had an average crown size (the leafy outgrowth of a tree) of 96 sq.m, and such a high loss rate of mature trees over less than a decade is "unexpected."

- The tree loss estimate was on the "conservative" side, and most of the losses were likely between 2018 and 2020.

REASONS FOR SUCH MASSIVE LOSS:
- **Conversion of farmland to paddy fields:** By shifting agroforestry land towards paddy fields which are being expanded and intensified, a development facilitated by the availability of newly established water supplies.
- **Cultivation of trees in separate blocks:** Large and mature trees within these fields are removed, and trees are now being cultivated within separate block plantations, typically with **lower ecological value**.
- **Deforestation** can occur in any area with dense tree cover and can result from deliberate actions, natural events, or accidents. Major causes of deforestation include volcanic eruptions, avalanches, hurricanes, changes in climate or temperature, drought, severe insect infestations, disease, and various human activities such as residential, agricultural, commercial, and industrial land development, as well as strip mining, logging, and unsustainable forest management practices.
- **The growing population** also exacerbates deforestation, as increased resource demand leads to more tree loss. This trend is particularly concerning because deforestation often leads to further deforestation in a self-perpetuating cycle.

EFFECTS OF DEFORESTATION:
- **Gaseous exchange:** When trees are cut down, the CO_2 is emitting into the atmosphere, increasing the greenhouse gases in our atmosphere which is one of the major deforestation causes and effects.
- **Disturb water cycle:** Trees help to control the level of atmospheric water and when they are cut down, there is less water in the air to return to the soil disturbing the water cycle.
- **Decrease of crop productivity:** This results in dryer soil which will eventually stop supporting agriculture or ranching which is one of the causes of deforestation to be aware of.

- **Extinction of species:** Cutting of trees results in temperature changes and increased sunlight, which can prove disastrous for many plant and animal species as it results in endangerment or extinction of species.
- **Soil erosion :**The roots of various plants prevent soil erosion and also one of the crucial deforestation effects to remember. Deforestation degrades the quality of soil as fertile topsoil gets washed away leaving the land barren and prone to flooding. Soil erosion perpetuates deforestation as new land is deforested to support crop growth or cattle grazing.
- **Habitat destruction:** A lot of indigenous people rely completely on forests for their livelihood and they are adversely affected due to deforestation. Deforestation kills plants they may use for medicine and sustenance, drives away the animals, leaves them vulnerable to the elements and disrupts their life.

METHODS TO INCREASE TREE COVER:
- **Afforestation:** Plant a tree whenever and wherever possible. Every tree that is planted reduces the effects of deforestation. India's National Mission for a Green India (GIM) plans to increase tree cover on 5 million hectares of designated forest lands and non-forest lands.
- **Adoption of 3R`s practices :**Start practising the concept of r**educing, reusing and recycling** in your daily lives and encourage others to do the same.
- **Move to digital practices:** Since paper comes from trees, try reducing the use of paper in your daily lives. Don't discard paper that has only been used on one side**.**
- **More use of eco-friendly products:** Promote products that ensure reduced or no deforestation as one of the deforestation solutions.

WAY FORWARD:
- **Promote agroforestry and tree cultivation** outside forests on private and community lands. Encouraging farmers and landowners to grow trees can significantly boost tree cover.
- **Integrate tree planting and conservation into urban planning and development**. Increasing green cover in cities and towns can provide multiple benefits, like reducing heat island effects, improving air quality, and enhancing aesthetics.
- **Promote participatory approaches** involving local communities, NGOs, and the private sector in tree planting and forest management.
- **Enhance public understanding and develop skills** regarding the significance of trees and forests, as well as the methods for cultivating and managing them effectively.
- **Ensure that tree planting efforts prioritise native species** and maintain biodiversity.
- **Developing climate resilient species to maintain ecological balance.**

PRELIMS BASED QUESTION
Q. CONSIDER THE FOLLOWING STATEMENTS:
1. India lost about 10 million trees in the last five years.
2. India has the world`s largest agricultural lands.

Which of the following statement/s above is /are correct about India?
1. 1 Only
2. 2 Only
3. Both 1 and 2

4.   Neither 1 nor 2
Answer: B

MAINS BASED QUESTION :
1.   **How can technology be used to increase forest cover? What are the economic benefits of increasing forest cover to address the livelihood issues of the locals? Analyse in detail.**

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Vishal yadav

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DIGITAL ARREST

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF " DIGITAL ARREST". THIS TOPIC IS RELEVANT IN THE "INTERNAL SECURITY" SECTION OF THE UPSC CSE EXAM.

WHY IN THE NEWS?
The Ministry of Home Affairs (MHA) is warning about a new online fraud scheme dubbed 'digital arrest,' in which cyber criminals impersonate police officials to extort money from victims. The ministry highlights various tactics used by fraudsters, such as fake parcel deliveries or fabricated arrests.

ABOUT DIGITAL ARREST:

*   Digital arrest scams occur when cybercriminals pose as law enforcement or customs officials. They trick individuals into thinking they're facing legal action for non-existent crimes, manipulating victims into complying with their demands. This deceptive practice exploits the fear of legal trouble to extort or deceive.

*   Victims are tricked into believing"they're under "dig" or arrest" by cybercriminals, who demand payment while making them stay visible on Video calls, leading them to self-quarantine until they comply.

*   Scammers use psychological tactics, instilling fear and a sense of urgency, to pressurise victims into paying money or divulging personal details to prevent a supposed "arrest."

*   These schemes often involve fraudulent phone calls, emails, or social media communications in which the scammers allege the victim's participation in unlawful acts like smuggling or fraud.

*   Individuals frequently face requests to share confidential details or remit funds to exonerate themselves from baseless charges. Such frauds can culminate in substantial monetary

detriment and the theft of personal information, with incidents documented in several Indian states.
- Examples of digital arrest include China's deployment of a widespread surveillance system, utilising cameras with facial recognition technology to oversee and regulate its citizens. This practice has raised substantial global apprehensions about privacy and human rights.

ETHICAL AND LEGAL IMPLICATIONS:
The deployment of digital technologies by law enforcement agencies brings to the forefront various ethical and legal challenges, such as:
1. Extensive surveillance and data collection practices could infringe on personal privacy rights.
2. Technologies such as facial recognition may suffer from inaccuracies and biases, which could result in incorrect arrests or the unfair targeting of particular demographics.
3. Ensuring due process involves collecting and utilising digital evidence to uphold legal requirements and individual rights.
4. Law enforcement agencies must be open about digital technologies and take responsibility for their conduct to uphold public confidence.

The National Cyber Crime Reporting Portal (NCRP) has received numerous reports of cybercriminals impersonating law enforcement agencies, such as police, the Central Bureau of Investigation (CBI), the Narcotics Department, the Reserve Bank of India (RBI), and the Enforcement Directorate (ED), engaging in activities like intimidation, blackmail, extortion, and making false arrests. Intelligence Agencies have identified these activities as components of a larger, organised online economic crime operation orchestrated by international criminal networks.

In collaboration with Microsoft, the Indian Cyber Crime Coordination Center (I4C) under the Ministry of Home Affairs has successfully blocked over 1,000 Skype IDs. The Department of Telecommunications (DoT) has released warnings to inform the public about counterfeit calls that threaten service termination and has implemented several strategies to tackle potential fraud in communications. E.g., under the Sanchar Saathi initiative, 52 organisations responsible for distributing harmful and phishing text messages have been placed on a blacklist.

WAY FORWARD:
- Establish robust password protocols that necessitate a combination of uppercase and lowercase letters, digits, and symbols. Employ password managers to create and safeguard distinct passwords for various accounts. Utilise protected methods of communication such as HTTPS and VPNs. Ensure operating systems, programs, and apps are consistently updated with the newest security fixes.
- Ensure tight access restrictions are in place so only those with proper authorisation can reach confidential data. Employ role-based access control (RBAC) to allocate access rights depending on the individual's job function. Formulate and upkeep an elaborate plan for incident response to efficiently handle and lessen the impact of cyber fraud. Consistently evaluate and refine this incident response strategy.
- Installed trusted antivirus and anti-malware programs, ensuring that operating systems and software are consistently updated to adhere to current security measures. Offered ongoing training for all staff on identifying phishing efforts, social engineering schemes, and various prevalent scam strategies.

- Promoted an environment where security consciousness and accountability are paramount. Initiated campaigns aimed at the public to spread knowledge about secure internet usage and identify possible fraudulent activities.
- Collaborate closely with law enforcement bodies to address and report instances of cyber fraud. Engage in networks that share information to remain updated on new threats. Investigate blockchain technology's potential to secure transactions and improve record traceability and permanence.

MAINS PRACTICE QUESTION:

Q. **Examine the most common reasons for digital arrests by law enforcement agencies. How can individuals protect themselves from becoming victims of digital arrest?**

Amit Pradhan