

**UPSC Syllabus Topic: GS Paper 3 Science and Technology – Developments and their applications and effects in everyday life.**

**The Influence of Soft Power on India's Economic Ascendancy**

Deepfakes are fabricated content, encompassing videos, images, and audio, generated using advanced artificial intelligence tools. This technology employs a machine learning technique called generative adversarial network (GAN) to modify or create visuals and videos. The AI software learns and replicates the subject's movements and facial expressions from source material to produce realistic content.

**Tracking Deepfakes involves several technical analyses, including:**

1. **IP Address Tracking:** Tracing the unique identifier assigned to every internet-connected device.
2. **Open-Source Intelligence (OSINT):** Gathering and analyzing information from public sources to answer specific questions.
3. **Metadata Analysis:** Examining data describing other data to identify factors like creation time and modification details.
4. **Facial Recognition Technique:** Analyzing inconsistencies in facial features or movements that deviate from natural human behavior.
5. **Content Recognition Algorithms:** Detecting irregularities in audiovisual elements, such as unnatural alterations, discrepancies in facial expressions, or anomalies in contextual details.

**A legal framework addressing Deepfakes should include:**

1. **Clear Definitions:** Precise definition of what constitutes a deepfake.
2. **Prohibitions Against Misuse:** Restrictions on using deepfakes for fraud, impersonation, or election interference.
3. **Timely Redressal:** Establishing an active mechanism for swift resolution, considering the rapid dissemination of deepfake content.
4. **Involvement of Social Media Platforms:** Requiring platforms to promptly detect and remove deepfake content.
5. **Legal Remedies:** Providing victims with the ability to seek legal recourse against creators and distributors.
6. **Protection for Minors:** Special provisions safeguarding minors from potential severe consequences of deepfake misuse.
7. **Protecting the Rights of Artists:** Balancing artists' rights for fair use, including principles such as copyright and the right to privacy.

**UPSC Syllabus Topic: GS Paper 3 Agriculture – Major crops-cropping patterns in various parts of the country; Food processing and related industries in India.**

**Opium Cultivation in India: Navigating an Uncertain Future Amidst Poppies**

The opium crop serves various purposes, producing two types of narcotic raw materials: opium gum (latex) and the concentrate of poppy straw (CPS). Opium, containing morphine known for its analgesic properties, is cultivated for pain relief. Additionally, it is a source of edible seeds and seed oil. The production of opioids, including heroin, is another significant use.

In India, opium cultivation is carried out by approximately 100,000 licensed farmers across 22 districts in Madhya Pradesh, Rajasthan, and Uttar Pradesh. The districts of Mandsaour, Neemuch, and Chittorgarh, bordering Madhya Pradesh and Rajasthan, collectively contribute to 80% of India's opium. Opium cultivation, known as "swabhiman ki kheti" (agriculture of dignity), has a historical presence in the Mewar region, with some families engaged in it for up to 200 years.



Source: The Hindu

**Issues associated with opium cultivation in India include:**

1. **Stagnant Procurement Rates:** Opium procurement rates have not seen an increase for many years.
2. **Rising Input Cost:** The cost of inputs, such as fertilizers, labor, and pesticides, has risen.
3. **Risk of Crop Theft:** Farmers face the constant threat of crop theft.
4. **Highly Regulated:** Due to its addictive nature and potential for hallucinations, opium production is heavily regulated in India.
5. **Competition from Private Players:** Farmer dissatisfaction arose from the government's decision to allow private players into the sector in 2021.

**The change in opium policy in 2021, permitting private players to produce CPS, was driven by several factors:**

1. **Boosting Alkaloid Yield:** CPS, through its processing method, enhances the concentration of morphine, boosting alkaloid yield.
2. **Export Competitiveness:** To align with global practices, particularly as other countries shift to CPS, enhancing India's opium competitiveness in the global market.

3. **Better Drug Law Enforcement:** Reducing the illicit market for opium gum contributes to improved drug law enforcement.
4. **Price Competitiveness:** CPS is less labor-intensive, potentially reducing costs compared to traditional farming methods.

**However, concerns raised by farmer organizations regarding the entry of private players and the CPS system include:**

1. **National Security Issue:** Farmers fear a potential threat to national security as private companies might provide access to alkaloids for the drug mafia.
2. **Costly Medicine:** Handing opium production to private entities may increase the cost of life-saving medicines, affecting economically vulnerable patients.
3. **Lack of Transparency:** Allegations of a lack of transparency in the CPS mechanism.
4. **Lack of Consultations:** Farmers criticize the introduction of the scheme during lockdown without adequate consultations.
5. **Rise in Illegal Activities:** There is a belief that allowing private players may lead to an increase in illegal activities, such as smuggling, among distressed farmers.