Editorial Summary

16% Rise in CSR spending

Context
Total CSR spending by listed companies has increased by 16% to ₹17,967 crore in 2023-24.

What is CSR (Corporate Social Responsibility) ?
- It is a concept whereby companies integrate social and environmental concerns in their business operations.
- In India, Companies Act, **2013 has made CSR contribution mandatory.**
- **India was the first country in the world to make CSR spending compulsory by law .**
- A company must spend on CSR if it meets **any one** of these conditions:
  - **Net worth** of ₹500 crore or more,
  - **Revenue (turnover)** of ₹1,000 crore or more,
  - **Net profit** of ₹5 crore or more (during any financial year).
- **At least 2%** of the **average net profits** of the **preceding three financial years** must be spent on CSR activities.
- **CSR Committee:** Companies required to spend CSR amounts must form a **CSR Committee**:
  - Minimum **3 directors** (including at least **one independent director**).

What Happens if a Company Fails to Spend CSR Money?
- If a company **fails** to spend the required amount:
  - It must **explain the reason** in its Board Report.
  - The **unspent amount** must be:
    - Transferred to a special **Unspent CSR Account** within **30 days** of the financial year-end & utilized within **three financial years**.
- If still unspent after three years, it must be transferred to:
  - **PM CARES Fund**
  - **Prime Minister's National Relief Fund**
  - Other specified government funds.

Recent Trends (As per 2023-24 Data)
- Total CSR spend: **₹17,967 crore (**16% rise over last year).
- **Top areas funded:** Education (₹1,104 crore), Healthcare (₹720 crore)
- **Top companies by CSR spend:**
  - **HDFC Bank** (₹945.31 crore)
  - **Reliance Industries** (₹900 crore)
  - **TCS** (₹827 crore)
- Public Sector Units (PSUs) also increased their CSR spending by **19%**.

UPSC PYQ

With reference to Corporate Social Responsibility (CSR) rules in India, consider the following statements. **(2024)**

1. CSR rules specify that expenditures that benefit the company directly or its employees will not be considered as CSR activities.
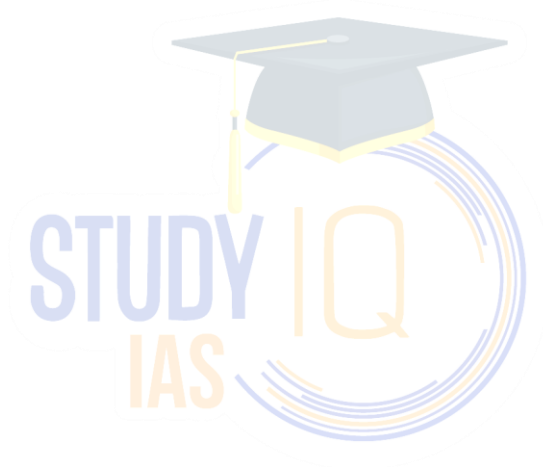2. CSR rules do not specify minimum spending on CSR activities.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Answer: A

Source:

●   **Indian Express - CSR**

UDAN Scheme

Context
Recently the first historic flight under UDAN Scheme completed 8 years.

About UDAN (Ude Desh ka Aam Naagrik)
● **Launched**: October 2016
● **Nodal Ministry:** Ministry of Civil Aviation
● **Objective:** To connect small and medium cities with big cities through air service.
● **Funding:** It is **jointly funded** by the central government and state governments.
● Under the scheme, airlines have to cap airfares for 50% of the total seats at Rs. 2,500 per hour of flight. This is achieved through;
  ○ **Viability Gap Funding (VGF)** – A government grant provided to the airlines to bridge the gap between the cost of operations and expected revenue.

Achievements of UDAN Scheme
● **A total of 625 UDAN** routes have been operationalized, connecting 90 airports across India.
● **More than 1.49 crore passengers** have benefited from affordable regional air travel under UDAN.
● India's airport network expanded from **74 airports in 2014 to 159 airports in 2024**, more than doubling in a decade.
● UDAN strengthened r**egional tourism, healthcare access and trade, catalyzing economic growth in Tier-2 and Tier-3 cities.**

Facts
● India is the world's **third-largest** domestic aviation market, after the USA and China.
● As of 2024, India has **157** operational airports.
● **Directorate General of Civil Aviation** is the regulatory body in the field of civil aviation.

Source:
● **PIB - UDAN Scheme**

Simlipal - 107th National Park of India

Context

The Odisha government has notified the Similipal Tiger Reserve (STR), the world's only home to wild melanistic tigers, as a national park. It will be the **2nd NP of Odisha after Bhitarkanika.**

About Similipal Tiger Reserve (STR)

- **Location:** Mayurbhanj District, in the Northern-most part of Odisha.
- It is a **National Park, Tiger Reserve & Biosphere Reserve.**
- **Flora:** Mix of deciduous with some semi-evergreen forests. Sal is the dominant tree species.
- **Fauna:** Tiger, Elephant, Leopard, Barking deer, jungle cat, four-horned antelope etc.
  - It holds the highest tiger population in the state of Odisha.
  - **Black tigers (melanistic tigers) are found here.**
- At Least **12 rivers** cut across the Tiger reserve, all of which drain into the Bay of Bengal.
  - Budhabalanga, Palpala Bandan, Salandi, Kahairi and Deo.
- **Prominent tribes:** Erenga Kharias, Mankirdia, Khadia, Kolha etc.
- **UNESCO Biosphere Reserve:** Declared a biosphere reserve in 1994.
  - It is also a part of the **UNESCO World Network of Biosphere Reserves since 2009.**
- STR is part of the **Mayurbhanj Elephant Reserve**, which also includes the Hadagarh Wildlife Sanctuary and Kuldiha Wildlife Sanctuary.

Melanistic Tigers (Black Tigers)

- Black tigers are a rare colour variant of the Royal Bengal tiger, with thick, dark stripes covering their brown skin.
- This is due to a condition called melanism, which results in dark pigmentation in animals.
- This unique appearance results from a mutation in the *Transmembrane Aminopeptidase Q* (Taqpep) gene.
- **In India Melanistic Tigers are found in STR only.**
- According to the Odisha **Tiger Estimation** conducted this year, out of the total 24 adult tigers in Similipal, **13 are pseudo-melanistic**.

Source:

- **Indian Express - Simlipal NP**

RNA-Based Antiviral for Deadly Agricultural Virus

Context
According to the **U.N. Food and Agriculture Organization (FAO)**, plant pests and diseases destroy nearly **40% of the world's annual crops**, costing the global agricultural economy **more than $220 billion**.

About Cucumber mosaic virus (CMV)
- CMV is one of the most **destructive plant viruses**, affecting over **1,200 plant species**, including **food crops** like cucumbers, squash, cereals and medicinal plants.
- **It** is responsible for significant yield losses, particularly in **banana plantations (25-30%)** and **pumpkins, cucumbers and melons** (up to **70%**).

Impact of CMV on Crops
- In **India**, CMV is a major cause of yield losses in banana plantations and several other crops.

RNA-Based Technology for Crop Protection
- **RNA Silencing and Plant Immunity:**
  - Plants have an **immune response** known as **RNA silencing**, which is activated when a virus introduces **double-stranded RNA (dsRNA)** into the plant.
  - The plant uses **Dicer-like enzymes (DCLs)** to process dsRNA into **small interfering RNAs (siRNAs)**.
  - These siRNAs guide the plant's immune system to **recognize and destroy viral RNA**, preventing the spread of infection.
  - **Problem with Plant's Natural Defense:**
    - Sometimes, the plant's natural defense doesn't work perfectly.
    - Some viruses, like the **CMV**, change quickly and can escape the plant's defense.

Techniques invented by scientists to boost plant's natural defence
- **Host-Induced Gene Silencing (HIGS)**: Scientists modify plants so they **make special RNA** inside their cells. This RNA protects the plant from viruses. However, this method requires **genetic modification** and can be expensive.
- **Spray-Induced Gene Silencing (SIGS)**: In this method, farmers **spray RNA** directly onto the leaves of plants. The RNA helps the plant fight the virus without changing the plant's genes. It's cheaper and easier than genetic modification.
- **Latest Innovation:**
  - Researchers have created a **better RNA** called **"effective dsRNA"**. This is **specially designed** RNA that works better at protecting plants.
  - Instead of just using random RNA, they use **highly effective RNA** that **targets** the virus more precisely. This means the plant can fight off the virus **stronger** and **more effectively**.
  - It is **more Targeted & has Stronger Defense.**

Source:
- **The Hindu - RNA based Antiviral**

Places in News

Shahid Rajaee Port

- A recent explosion at Iran's Shahid Rajaee port killed 28 people and left 800 injured. The explosion took place in a shipment of **"sodium perchlorate rocket fuel"** (used in missiles).

- **Location:** Northern shores of the Strait of Hormuz. On the west-southwest of the Port of Bandar Abbas.
- It is part of **Bandar Abbas Port Complex.**
- Shahid Rajaee port is **Iran's largest and most advanced terminal.**

Source:
- **Indian Express**

News in Shorts

India's first wolf sanctuary - Mahuadanr Wolf Sanctuary

- It is located in **Latehar district, Jharkhand** within the Palamau Tiger Reserve.
- It is India's first and only dedicated wolf sanctuary, located
- The landscape is inhabited predominantly by tribal communities, with **over 80% followers of "Sarna Dharma"** — a nature-worshipping faith.

About Indian Grey Wolf

- It is a subspecies of the **grey wolf** found across **Southwest Asia and the Indian subcontinent.**
- **Habitat:** Scrublands, grasslands and semi-arid agroecosystems.
- **Characteristics:**
  - It lives in **smaller packs and is less vocal**.
  - It's primarily a nocturnal hunter, active from dusk to dawn.
- **Conservation Status:**
  - **IUCN:** Endangered
  - **CITES:** Listed in Appendix I
  - WPA, 1972: Schedule I

Source:
- Down to Earth - Wolf Sanctuary

National Industrial Corridor Development Corporation (NICDC)

- Recently NICDC was honoured with the **Udyog Vikas Award** for its outstanding contribution to developing Greenfield Industrial Smart Cities.

About NICDC

- NICDC is India's premier government body for planning, developing and implementing industrial corridors across India.
- It was established in **2007** Delhi-Mumbai Industrial Corridor Development Corporation. It was later renamed **NICDC** in **December 2020**.
- **Key Objectives of NICDC:**
  - **Develop Industrial Corridors** as a global manufacturing and investment destination.
  - **Integrate industrial development** with urban infrastructure (like smart cities, logistics hubs, and transport networks).
  - Facilitate **Make in India**, **Atmanirbhar Bharat**, and **Ease of Doing Business** initiatives.

Source:
- PIB - NICDC

Phenome India Project

- **Phenome India-CSIR Health Cohort Knowledgebase (PI-CheCK)** project was launched by the Council of Scientific and Industrial Research (CSIR) in December, 2023.
- **Aim:** Develop India-specific risk prediction models for cardio-metabolic diseases, acknowledging the unique genetic, lifestyle and dietary patterns of the Indian population.

- **Sample Size**: Approximately **10,000 participants**, including CSIR employees, pensioners, and their spouses.

Council of Scientific and Industrial Research (CSIR)
- It is India's largest research and development (R&D) organization, established in September **1942**. (HQ - New Delhi).
- It operates as an **autonomous body** under the **Ministry of Science and Technology.**
- The Prime Minister of India is the **Ex-officio chairman of the Council of Scientific and Industrial Research.**

Source:
- **The Hindu - Phenome India**

RBI Operationalises .bank.in Domain for Indian Banks

- The Reserve Bank of India (RBI) has decided to operationalise the exclusive internet domain '.bank.in' for banks.

About.bank.in Domain
- **Domain name is** a **unique, easy-to-remember address** used to access websites
- **Purpose:** To **combat rising digital payment frauds**.
- **Migration Deadline**: Banks must migrate to .bank.in by October 31, 2025.
- **Registrar**: Institute for Development and Research in Banking Technology (IDRBT) has been authorised as the exclusive registrar.
- **Under Supervision of:** National Internet Exchange of India (NIXI), functioning under Ministry of Electronics and IT (MeitY).
- **Current Domains**: Banks are currently using **.com**, **.co.in**, and other **generic domains**.

Expected Benefits
- **Enhanced Cybersecurity:** Harder for fraudsters to impersonate banks.
- **Reduction in Phishing Attacks**: More difficult to create fake bank websites.
- **Stronger Customer Trust**: A **standardised, exclusive domain** will reassure customers of authenticity.
- **Streamlined Digital Services:** Safer and more secure banking and payment experiences.

Source:
- **Indian Express - Domain Migration**

Bone Collector Caterpillar

- A new species of carnivorous caterpillar, named the "bone collector", has been discovered on the Hawaiian island.

About Bone collector
- It is a carnivorous caterpillar that feeds on trapped insects in spider webs.
- It is **not just a scavenger** but an active predator, consuming **insects already caught by spiders**.
- **Protective Silk Case**:
  - It constructs a **silk case** made from **insect parts**, such as **ant heads** and **fly wings**.
  - The **decorated case** serves as a form of **camouflage**, helping it blend in with its environment and avoid detection by spiders.
- **Rarity: Predatory caterpillars** are **extremely rare**, and the **bone collector** is a unique example of such behavior.
  - Researchers have found only **62** of these caterpillars during **20 years** of observations.
- **Cannibalistic Behavior:** Bone collector caterpillars have also been observed to eat each other.

Source:
- **The Hindu - Bone Collector Caterpillar**

Asola Bhatti WLS

- Delhi Government has planned to replace all Petrol, Diesel and CNG vehicles with EVs that are currently used to supply food, water and other essential supplies.

About Asola Bhatti WLS
- **Location:** On the Southern Delhi Ridge of the **Aravalli range.**
  - It borders Delhi-Haryana, covering southern Delhi and northern parts of Faridabad and Gurugram districts in Haryana.
  - It is part of **Sariska-Delhi Wildlife Corridor.**
- **Fauna:** Golden Jackals, Striped-Hyenas, Indian crested-Porcupines, Civets, Jungle Cats, Snakes, Monitor Lizards, Mongoose etc.
- **Flora:**
  - It features plants with **xerophytic characteristics** like thorns, wax-coated and succulent leaves.
  - **Prosopis juliflora and the Diospyros montana** cover a major area of it.

Source:
- **Indian Express - Asola Bhatti**

Editorial Summary

Political Trilemma

Context

Dani Rodrik in his paper *"How Far Will International Economic Integration Go?"* introduced the concept of political trilemma.

What was the Core Proposition?

- Countries can only simultaneously achieve two of the following three goals:
    - International economic integration (globalisation)
    - Nation-state (sovereignty)
    - Mass politics (popular democracy)

How Rodrik's Trilemma Remains Relevant Today

Rodrik's political trilemma remains highly relevant because the **fundamental conflict between globalisation, democracy, and national sovereignty** is clearly visible in today's world:

- **Backlash Against Globalisation**: In the US, UK, and Europe, free trade and open markets boosted economies but **created winners and losers**.
    - **Job losses** in manufacturing and rising inequality triggered anger among those left behind.
- **Rise of Populism and Protectionism**: Leaders like **Donald Trump**, **Geert Wilders**, and **Viktor Orbán** gained popularity by attacking globalisation, promoting nationalism, and calling for immigration controls.
- **Erosion of Democratic Institutions**: Economic insecurity and distrust in mainstream parties have **weakened faith in democracy**, leading to polarisation and extreme politics.
- **Tensions Within the EU**: The European Union tried balancing democracy, sovereignty, and globalisation, but resentment over lost sovereignty led to **Brexit** and **rise of far-right parties**.
- **Technocratic Governance Criticised**: In developing countries like **Kenya**, public anger against IMF-driven austerity highlights the problem of **economic decisions being made without popular consent**.
- **Trade-offs Unavoidable**: Countries are still **struggling to manage the trade-offs** between the three goals. Those ignoring these trade-offs face **social unrest**, **political instability**, and **economic stagnation**.

Source: The Hindu: The 'political trilemma' and the crisis in the West

Indian Arbitration

Context
India's economic ascent has naturally sparked widespread discussions about the potential role of Indian arbitration in driving further growth.

What is Arbitration?
- It is a method of resolving disputes outside the traditional court system.
- In arbitration:
  - The parties in dispute agree to present their case to a **neutral third party** (called an **arbitrator** or a **panel of arbitrators**).
  - The arbitrator hears the evidence and arguments from both sides.
  - Based on this, the arbitrator makes a **decision**, which is usually **final and binding** on the parties.
- The Indian arbitration is governed and regulated by the **Arbitration and Conciliation Act 1996** (which is amended in 2015, 2019 and 2021),

Need for Reform in Indian Arbitration
- **Increase in Disputes**: With India's economic rise and expanding domestic and cross-border commerce, commercial disputes have become **inevitable**.
- **Overburdened Courts**: India's traditional litigation system is **overloaded** and **slow**, making it unsuitable for resolving **time-sensitive and technical commercial disputes**.
- **Demand for Credible Arbitration**: Arbitration is expected to provide **faster, efficient, and expert dispute resolution**, which requires **high-quality arbitrators** at the core.
- **Building Global Reputation**: For India to become a **global hub for arbitration**, it needs an arbitration ecosystem that **matches international standards**.
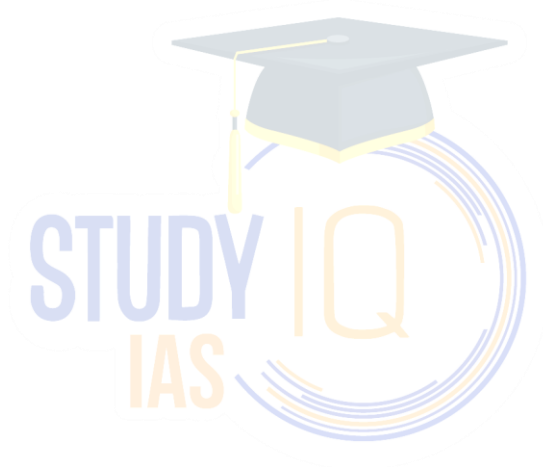
Challenges in Indian Arbitration
- **Overdependence on Retired Judges**:Appointment of arbitrators is heavily skewed towards **retired Supreme Court and High Court judges**.
  - Judicial training does not automatically ensure **efficiency, flexibility, or innovation** needed for arbitration.
- **Poor Quality of Proceedings and Awards**: **Mimicking of court procedures** in arbitral proceedings.
  - **Lengthy, expensive, and poorly reasoned awards**, often vulnerable to challenges and setting aside in courts (highlighted by the Ministry of Finance's 2024 guidelines).
- **Lack of Focus on Arbitrator Training**: While there is effort to **train arbitration lawyers**, there is **negligible attention towards building an elite class of arbitrators**.
- **Limited Diversity in Arbitrator Pool**: Arbitrators mostly come from a **narrow background** (lawyers and judges), while complex commercial disputes often require **experts from various technical fields**.
- **Soft Skills and International Standards Missing**: Arbitration often involves **multinational tribunals** and **cultural sensitivities**.
  - Skills like **internal deliberation**, **drafting precise arbitral awards**, and **managing procedural flexibility** are often missing.

What Can Be Done?
- **Diversify the Arbitrator Pool**: **Include professionals** beyond judges and advocates — such as accountants, engineers, industry experts — who are trained in arbitration.
  - Encourage **sector-specific specialisation** (e.g., construction arbitration, energy disputes, finance-related arbitrations).

- **Mandatory Training and Accreditation**: Introduce **rigorous training programs**, certificate courses, and workshops.
  - Encourage arbitrators to join **professional arbitration associations** and meet **global best-practice standards**.
- **Cultural Shift in Arbitration Mindset**: Treat arbitration as a **distinct, serious discipline** rather than an extension of court litigation.
  - Focus on **innovation, flexibility, and procedural efficiency**.
- **Better Management of Proceedings**: Arbitrators must be trained to **conduct proceedings swiftly**, manage case timelines, and **deliver high-quality awards** that withstand judicial scrutiny.
- **Soft Skills Development**: Develop **negotiation, persuasion, and collaborative skills** for arbitrators to function effectively in **multinational, multicultural panels**.
- **Promote Global Exposure**: Encourage Indian arbitrators to **gain international experience**, **participate in international forums**, and **build cross-border credibility**.

Source: [The Hindu: The real Indian arbitrator needs to stand up](https://...)

India's AI compute conundrum

Context
- The Ministry of Electronics and Information Technology announced the launch of a continuous empanelment process for AI compute providers.
  - This will allow firms to apply on an ongoing basis to supply AI compute and related services.

Current Challenges in India's AI Compute Mission
- **Unsustainable Low-Bid Pricing Model:** Empanelled vendors must match the lowest bid, sometimes cutting prices by up to 89%, leading to **poor service quality** and **no incentive for R&D investment**.
- **Artificial Demand Creation:** Subsidies and reduced pricing stimulate demand temporarily but **do not reflect genuine private sector demand**. Once subsidies end, the market may collapse.
- **Heavy Bureaucratic Hurdles for Users:** Startups and users must navigate **complex qualification criteria** (e.g., Startup India registration, revenue/funding requirements) and **evaluation processes**, which **stifles innovation** and slows access to compute.
- **Low Private Market Demand for AI Compute:** Private players like Yotta report **only 25% of demand for high-end chips** (like Nvidia H100s) comes from within India, signaling **weak domestic compute demand**.
- **Insufficient Scale of Investment and Infrastructure:** India's compute capacity (~19,000 GPUs) is **far below global giants** (e.g., Meta's $10 billion data centre investment), making it difficult to **build frontier AI models**.
- **Energy and Import Challenges:** Future compute growth will **strain energy infrastructure**.
  - **Import hurdles** could delay scaling up of compute capacity.

What Needs to Be Done
- **Shift from Price Undercutting to Value Competition:** Encourage providers to **compete based on innovation, quality, and solutions,** not just low prices.
- **Simplify User Access and Reduce Friction: Relax over-restrictive eligibility criteria** for startups and innovators.
  - **Streamline evaluation processes** to speed up access to compute resources.
- **Stimulate Genuine Private Market Demand:** Focus on **building industries and startups** that naturally **require AI compute**, rather than relying heavily on subsidies.
- **Scale Energy and Infrastructure Development:** Invest in **energy grid upgrades** and **green energy** to support future data centre and compute demand.
- **Ease Import Procedures for Compute Hardware: Fast-track imports** of GPUs and AI chips to meet rising needs quickly.
- **Keep the Market Flexible and Future-Ready:** Ensure **minimal government distortion** so private players can **adapt to shifts** (e.g., from training-focused GPUs to inference-optimized chips).
- **Focus on Indian Use Cases, Not Just Building Frontier Models:** Align efforts with **practical Indian applications** (e.g., AI in healthcare, agriculture, education) where India can have a strong advantage.

Source: The Hindu: India's AI compute conundrum

A Revolution of Clean Energy

Context
On the occasion of International Mother Earth Day, it is imperative to reaffirm our commitment to transitioning towards a more sustainable economy that supports both humanity and the planet.

International Mother Earth Day
- Celebrated on **April 22**.
- Established by a **UN General Assembly resolution in 2009**, though its roots trace back to the **1970s**.
- **Objective**: To promote the **Harmony with Nature** initiative for sustainable human development.

Current Environmental Status in India
- **Environment Pollution Index (EPI) 2024** (Yale University): India ranks **176th out of 180 countries**.
- **World Air Quality Report 2024** (IQAir, Switzerland): Out of the **100 most polluted cities globally**, **74** are in **India**.
- **Energy Policy Institute (University of Chicago):** Residents of **Delhi/NCR** are losing **11.9 years** of life expectancy due to **air pollution**.
- Despite **government rejections**, the facts indicate a **public health emergency**, especially during **November-December gas chamber conditions** in NCR.

Other Key Environmental Issues Beyond Air
- **Soil:**
    - Almost **two-thirds of India's soils** have **Soil Organic Carbon (SOC) below 0.5%**.
    - Optimal SOC should be **1.5–2%** (as per **Rattan Lal**, World Food Laureate).
- **Water:**
    - **Groundwater depletion** (Punjab, Haryana, Rajasthan) at over **1.5 feet per year** for the last two decades.
    - Increasing **contamination** due to **fertilisers and pesticides**.
- **Biodiversity:**
    - Practices like **rice-wheat crop rotation** in Punjab-Haryana have severely **reduced biodiversity**.
- These indicate an **unsustainable production system**, despite increased food output due to scientific advances like the **Green Revolution**.

Solutions and Way Forward
- **Policy Innovations:** Introduce **Payment for Ecosystem Services (PES)** schemes.
    - **Reward farming practices** that align with **nature conservation**, like:
    - **Carbon credits** for soil and water conservation.
    - Incentives for promoting **biodiversity**.
- **Repurposing Subsidies: Free power**, **highly subsidised fertilisers** (especially urea), and **open-ended procurement** of rice and wheat are damaging agri-ecosystems.
    - Redirect subsidies **directly to farmers' accounts** (Direct Benefit Transfers).
    - Deregulate **prices of power and fertilisers**.
    - Promote **pulses and oilseeds** cultivation:
        - They are **nutritious**.
        - Help **fix nitrogen** in the soil.
        - **Save groundwater** and **improve biodiversity**.
- **Clean Energy and Agrivoltaics:** Encourage farmers to treat **solar energy as a third crop**.
    - If **discoms buy solar power** from farmers at a **10–15% premium** over thermal energy generation costs:

- ■ **Cleaner energy production**.
- ■ **Conservation of ecosystem services**.
- ■ **Higher farmers' incomes**.
  - ○ Agrivoltaics could trigger a **revolution in clean energy adoption** at the farm level.

Conclusion

- India has achieved notable **economic growth** (GDP growth of **6.3% p.a.**; agriculture growth of **3.5% p.a.** from 2000–01 to 2024–25).
- However, **sustainability must now be prioritised** alongside economic development.
- **Balancing growth with nature conservation** is crucial to ensure a livable planet for future generations.

Source: Indian Express: A Revolution of Clean Energy