UPSC Daily Current Affairs| Prelim Bits 24-04-2025

Report on DBT implementation

Prelims – *Indian Polity and Governance, Public Policy.*

Mains (GS II) – *Government policies and interventions for development in various sectors and issues arising out of their design and implementation.*

Why in news?

Recent report by Blue Kraft Digital Foundation (NGO) reveals India's Direct Benefit Transfer (DBT) system has helped to reduce Expenditure on subsidy.

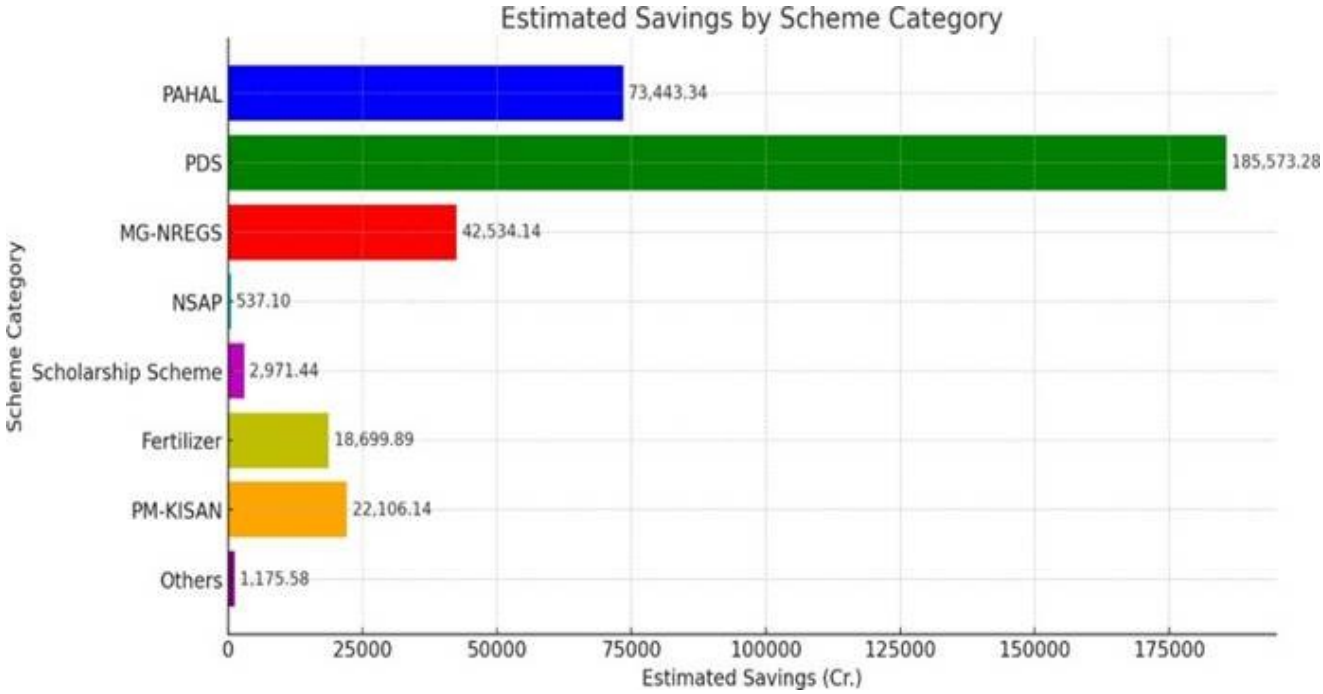
- **Direct Benefit Transfer** – It is a government initiative that transfers subsidies and benefits directly into the beneficiaries' bank accounts, bypassing traditional intermediaries.
- **Launch** – DBT was officially launched on *January 1, 2013*.
- **Implementation** – DBT Mission was originally created by the Planning Commission to act as the nodal point for the implementation of the DBT programmes.
- The Mission was transferred to the Department of Expenditure in 2013.
- To give more impetus, DBT Mission and matters related thereto has been placed in ***Cabinet Secretariat*** under Secretary from 2015.
- **JAM trinity** – One of the key features of DBT is the use of the JAM trinity, to facilitate direct benefit transfers.



- Aadhaar is *preferred but not mandatory for DBT schemes*.
- **Core objective –** Promote "*Maximum Governance, Minimum Government*" through technology.

Key findings of the report

- **Welfare Efficiency Index –** Introduced by *Blue Kraft Digital Foundation (NGO).*
- It is a methodology for assessing the impact of the Direct Benefit Transfer (DBT) system.
- It was developed as a composite metric to measure efficiency gains across various dimensions.
- **Components**
  - DBT Savings (50% weight)
  - Subsidy Reduction (30% weight)
  - Beneficiary Growth (20% weight)
- The Index rose nearly threefold from *0.32 in 2014 to 0.91* and its emphasis the efficiency in governance system.
- **Savings to government** – Direct Benefit Transfer (DBT) system has helped the government achieve cumulative savings of *Rs. 3.48 lakh crore* *by plugging leakages* in welfare delivery.
- **Reduced expenditure –** Subsidy allocations *have been halved* from 16% to 9% of total expenditure.
- **Beneficiary growth** – Despite reduced budget allocation percentage, beneficiary coverage *increased 16-fold*.
- **Food Subsidies (PDS)** – *Over 53% of total DBT* savings is from food subsidy and is primarily through Aadhaar-linked authentication.
- **MGNREGS** - 98% of wages were transferred timely through DBT-driven accountability.
- **PM-KISAN** – Got DBT benefit by deleting 2.1 crore ineligible beneficiaries from the scheme.
- **Fertilizer Subsidies -** Sales of fertiliser were reduced, through targeted disbursement.



References

1. PIB| DBT in Boosting Welfare Efficiency

2. DBTbharat| Direct Benefit Transfer

Coenzyme Q (ubiquinone)

Prelims – *Current events of national and international importance.*

Mains (GS III) – *Science and Technology- developments and their applications and effects in everyday life.*

Why in news?

Recent study reveals that CRISPR-edited rice producing CoQ10, coenzyme can play critical role in human food.

Enzymes and Coenzymes
• **Enzymes –** These are proteins that catalyse reactions in a cell, making metabolism efficient. • **Coenzymes** –Many enzymes require some molecules as cofactors, for efficient functioning. These helper molecules are called coenzymes. • They are naturally occurring *non-protein molecules organic* molecules that bind to and support enzyme activity. • **Types** – Based on the chemical nature, coenzymes can be classified as - Vitamins or vitamin-derived coenzymes (Eg, NAD+ and NADP+ are derived from vitamin B3). - Nonvitamins or metabolite coenzymes.

- **Coenzyme Q (ubiquinone)** – It is a *metabolite coenzymes type* of coenzymes that is present in every cell membrane.
- It is a ***fat-soluble*** and *water insoluble* naturally occurring molecule.
- **Types -** It comes in 10 different types (CoQ1 to Q10).
- **Function** – All these coenzymes play a vital role in the *function of the mitochondrion*, which is the powerhouse of a cell.
- **CoQ9** – It is a rich source of nutrition and is abundant in cereals (wheat, rice, oats, barley, corn, rye, millet) and plants like bamboo and avocado.
- **CoQ10** – It is critical for high-energy organs like the heart, supports the mitochondrial electron transport chain.
- While humans naturally produce CoQ10, most plant-based foods like rice and wheat primarily synthesize CoQ9.
- The researchers used ***CRISPR gene editing*** to modify the native Coq1 gene in rice, specifically targeting the *"DdsA" gene.*
- This modification allows the rice to synthesize the desired CoQ10.
- **Advantages -** Developing CoQ10-enriched crops offers a cost-effective and sustainable way to enhance nutritional value and improve health benefits.
- The gene-edited rice demonstrated over 75% CoQ10 accumulation in both grains and leaves.
- This offers a potential solution for increasing CoQ10 intake in the diets of individuals, particularly those at risk of deficiency.

- Supplementing CoQ10 has been shown to help patients with neurological problems.

Reference

The Hindu| Role played by coenzymes in human food

Digambar Jain temples

Prelims – *Current events of National Importance*

Mains (GS I) – *Indian History and Culture*

Why in News?

The Brihanmumbai Municipal Corporation (BMC) recently demolished most of the Digambar Jain temple, which Digambar Jain Mandir Trust managed in Vile Parle in the city's western suburbs, Mumbai.

- Digambara Jain temples are significant in the religious landscape of India, particularly for the ***Digambara sect within Jainism.***
- These temples, often referred to as *Digambara Jain Mandir.*
- These temples features elaborate carvings and sculptures of the ***24-four Tirthankaras***, are integral to the faith's architecture and cultural practices.
- **Sub-sects -** Digambara temples can be found in different sub-sects, each with its own distinct rituals and practices, such as *Mula Sangh, Terapantha, and Taranapantha.*
- **Key features -** The presence of idols, the use of ashtadravya (eight sacred objects)for worship, and offerings of flowers and fruits, though some sub-sects may substitute these with dried versions.
- **Examples -** Ellora Caves (Maharashtra) and the Sri Digambar Jain Lal Mandir in Delhi.

Digambara Sect

- The Digambara sect is one of the two main branches of Jainism, the other being the Shvetambara sect.
- The term "Digambara" literally translates to ***"sky-clad,"*** referring to the Digambara monks practice of ***wearing no clothes.***
- They believe that renouncing all material possessions, which is essential for achieving liberation.

- **Historical Influence -** Digambara sect has a significant presence in South-West India, particularly in Maharashtra and Karnataka.
- **Text** - They does not believe in the existence of original canonical texts.
- **Possessions -** Digambara monks are allowed only two possessions, a Jainworld states peacock feather whisk (pinchi) for cleaning the path and a water gourd (kamandalu) for drinking water.
- **Diet and Eating Practices -** Digambara monks eat only once a day in a standing

posture, at a single house.

Reference

The Indian Express | Digambar Jain temple

Kinshasa Floods & Democratic Republic of Congo

Prelims – *Current events of International Importance | World Geography*

Mains (GS I) – *Geography of the World | Important Geophysical phenomena*

Why in News?

The flooding disaster in Kinshasa was a symptom of recent land use change, which has occurred rapidly in the city, turning it into a sprawling urban settlement without the necessary drainage infrastructure.

- **Kinshasa –** It is the capital of Democratic Republic of Congo (DRC).
- The city is the most densely populated city in the DRC, the most populous city and 3rd-largest metropolitan area in Africa.
- The ***Ndjili River*** and its tributary (Lukaya) flows through the city.
- At least 2% of the population live in areas prone to flooding. Urban infrastructure, especially flood-related, is non-existent or inadequate.
- Local rains combined with runoff from torrential rains coming from neighboring Congo Central Province overwhelmed the city's small urban tributaries.

Democratic Republic of Congo

- It is a country located in ***Central Africa.***
- **Nomenclature -** Refers to the ***Congo River***, which drains a large basin that lies mostly in the republic.
- It has a coastline on the *Atlantic Ocean* but is otherwise landlocked.
- By land area, it is the 2nd-largest country in Africa and the 11th-largest in the world.
- **Bordered countries -** Congo is bounded to the
  - North by the Central African Republic and South Sudan
  - East by Uganda, Rwanda, Burundi, and Tanzania
  - Southeast by Zambia; and to the southwest by Angola
  - West are the country's short Atlantic coastline, the Angolan exclave of Cabinda, and Congo (Brazzaville).
- **Geographical features -** The lowest point occurs at Lake Mai-Ndombe and the highest point is reached in the hills of *Mobayi-Mbongo and Zongo* in the north.
- The volcanic ***Virunga Mountains*** stretch across the Western Rift Valley north of ***Lake Kivu.***
- The ***Mitumba Mountains*** stretch along the Western Rift Valley
- **Important Lakes -** Albert, Edward, Kivu, Tanganyika, and Mweru.
- **Natural Resources -** Boasts vast deposits of industrial diamonds, cobalt, and copper;

one of the largest forest reserves in Africa; and significant hydroelectric potential.
- **Economy -** It is one of the poorest countries in the world.
- **Society -** DRC ranks **164** out of 174 countries on the 2020 Human Capital Index.
- DRC has one of the highest stunting rates (42% of children under age five), and malnutrition is the underlying cause of almost half of the deaths of children under the age of five. It has very high fertility rate.

Reference

Down to Earth | Democratic Republic of Congo

Gonorrhea

Prelims – *Current events of National Importance| General Science*

Mains (GS I) – *Issues relating to development and management of Social Sector/Services relating to Health.*

Why in News?

A new study finds that a new type of antibiotic, gepotidacin for the treatment of urinary tract infections in women could also work against gonorrhoea infections

- It is a contagious ***sexually transmitted infection***.
- **Caused by** - Neisseria gonorrhoeae, type of bacteria.
- It is often called "the clap" and can affect the genitals, mouth, or rectum.
- **Transmission -** Primarily occurs through vaginal, oral, or anal sex.
- It can also be transmitted from a mother to her baby during childbirth.
- **Symptoms**
    - **Men** - May experience pain or burning while urinating, discharge from the penis, and/or testicular pain.
    - **Women** - May experience vaginal discharge, pain or burning while urinating, and/or pelvic pain.
    - **Rectal Gonorrhea** - May cause anal itching, discharge, or pain during bowel movements.
    - **Throat Gonorrhea** - Can cause sore throat.
    - **Asymptomatic Infections** - Many people with gonorrhea have no symptoms, making it easy to spread unknowingly.
- **High -Risk Category** - Sexually active women younger than 25 and men who have sex with men are at increased risk of getting gonorrhea.
- **Severity** - Gonorrhea can lead to serious health problems if left untreated, and though rare, can even spread to the blood or joints.
- Among women, untreated gonorrhea can cause an infection of the reproductive organs called pelvic inflammatory disease, which can lead to a greater risk of pregnancy complications and infertility.
- In men, gonorrhea also can lead to infertility in rare cases.
- **Treatment** - The primary treatment for gonorrhea is ceftriaxone, an injectable

cephalosporin antibiotic.
- However, due to the emergence of drug-resistant strains, dual therapy with ceftriaxone and azithromycin is often recommended, especially in areas with high rates of resistance.
- **Prevalence -** Gonorrhea is the 2nd most common sexually transmitted disease caused by bacteria, just behind chlamydia.
- In the United States, gonorrhea and other sexually transmitted infections or STIs have become more common.

Reference

CNN |Gonorrhea

One Liners 24-04-2025

Polity & Governance

Poshan Tracker

Recently, Poshan Tracker application has received the Prime Minister's Award for Excellence in Public Administration 2024 in the Innovation (Centre) category.

• **Nodal Ministry** – Ministry of Women and Child Development (MWCD).
• **Objective** – To improve nutrition through technology and data-driven governance under Mission Saksham Anganwadi and POSHAN 2.0.
• **Focus areas** – It emphasizes grassroot implementation, inter-departmental convergence, tech-driven approaches via Poshan Tracker, and community empowerment through the Beneficiary Module.
• **Significance** – This award highlights Poshan Tracker's vital role in advancing national nutrition goals.

Bureau of Indian Standards (BIS)-Academia Interface

Recently, BIS will offer 500 internship opportunities in standardisation to students from its partner institutions.

• It is an 8-week internship program, which will involve pre-standardisation work, QCO compliance surveys, and site visits, focusing on manufacturing, testing, and quality assessment.
• **Vision** – To integrate a culture of quality and standardisation within academia.
• **Focus on** – The Annual Convention promoted action-oriented collaborations, curriculum integration, standards formulation, and student engagement through Standards Clubs.
• **Significance** – It includes standardisation modules in 15 institutes, over 130 R&D projects, 50+ BIS Corners, 198 Standards Clubs, and 3,400+ students in national quizzes.

International Relations and Issues

Double Tax Avoidance Agreement (DTAA)

Recently, India and the UK countries are actively negotiating the Free Trade Agreement, a bilateral investment treaty (BIT), and a Double Taxation Avoidance Agreement.

• **DTAA** – It is an agreement signed between two countries to prevent individuals or businesses from being subject to double taxation on their income.
• It is also known as a tax treaty.
• **Purpose** – To allocate taxing rights between the countries involved.

Central Asian Republics (CARs) Program

Recently, Department of Revenue (DoR), in collaboration with MEA and NSCS, organized a first-of-its-kind capacity-building program for Central Asian Republics (CARs).

• It is a 2-day program addressed to Countering the Financing of Terrorism (CFT) through cryptocurrencies, crowdfunding, and non-profit organizations.
• **Aim** – To enhance the technical skills and understanding of emerging terrorism financing risks specific to the Central Asian region through interactive discussions and best practice sharing.
• **Regional collaboration** – Uzbekistan, Turkmenistan, Kazakhstan, Tajikistan, and Kyrgyzstan participated, engaging with Indian authorities and an expert from the Eurasian Group (EAG).
• **Significance** – This initiative signifies a crucial step in bolstering regional cooperation and resilience against terrorism financing, underscoring India's dedication to global counterterrorism endeavors.

Agriculture

Root Rot

Recently, farmers cultivating the prized 'pichi poo' (red jasmine), are facing substantial losses due to a devastating fungal infection causing root decay in their crops.

• It is a soilborne disease attacking plant roots trunks and stems, leading to wilting and potentially plant death.
• **Caused by** – Pathogens like numerous fungi, including Armillaria mellea, Clitocybe tabescens, and Fusarium, along with oomycetes like Pythium, Phytophthora, and Aphanomyces.
• **Impact** – These pathogens spread through soil water and infect weakened plants.
• Overwatering, which depletes soil oxygen and suffocates roots, and the presence of fungal-like pathogens that thrive in such conditions.
• **Preventive measures** – Planting in well-drained soils or raised beds, using resistant plant varieties, and selecting plants suited for wet conditions.
• Affected plants should be removed, and some fungal treatments can be applied to the soil.

Security

Africa India Key Maritime Engagement (AIKEYME), 2025

Recently, Indian Navy ships INS Chennai and INS Kesari participated in the sea phase of AIKEYME 2025, conducting joint manoeuvring exercises and Visit, Board, Search & Seizure (VBSS) drills.

• It is a joint naval exercises, to maritime security and interoperability with partner nations in the African region.
• **INS Chennai** – It is the final Kolkata-class stealth-guided missile destroyer (Project 15A), was built by Mazagon Dock Limited (MDL) in Mumbai and commissioned in 2016.
• Operating under the Western Naval Command, this 164-meter, 7,500-tonne vessel boasts a top speed of over 30 knots.
• **Features** – Powered by 4 gas turbines, indigenous defence systems 'Kavach' and 'Mareech' against missiles and torpedoes, can operate 2 helicopters, equipped for NBC warfare and armed with BrahMos & Barak-8 missiles.
• **INS Kesari** – It is a Shardul Class Landing Ship Tank (LST), built by Garden Reach Shipbuilders and Engineers (GRSE), Kolkata, and commissioned in 2008.
• **Features** – To transport troops, tanks, armored vehicles, and military equipment, primarily supporting amphibious operations and Humanitarian Assistance and Disaster Relief (HADR) missions.

Science

Asteroid Donaldjohanson

Recently, NASA's Lucy spacecraft is preparing for a flyby of the asteroid Donaldjohanson and it is a significant milestone in its 12-year mission to explore ancient asteroids.

• **Located in** – 139 million miles from Earth within the asteroid belt between Mars and Jupiter.
• It is formed about 150 million years ago.
• **Asteroid characteristics** – During the flyby, Lucy gathered vital data, primarily focusing on determining the precise size and shape of Donaldjohanson.
• Scientists anticipate a unique form, potentially like a bowling pin or a snowman.
• **Lucy Mission** – Launched in 2021 and it is the 1st spacecraft to explore the Trojan asteroids.
• **Aim** – To study primitive asteroids orbiting in tandem with Jupiter, remnants from the solar system's formation, acting as time capsules of early planetary conditions.
• **Importance of the upcoming flyby –** The Donaldjohanson flyby serves as a crucial preparatory phase for Lucy's future encounters with the Trojan asteroids near Jupiter, allowing for instrument testing and preliminary data collection.

International Telecommunication Union (ITU)

Recently, India nominated Ms M. Revathi as its candidate for the Director of the Radiocommunication Bureau position at ITU.

• **Established in** – 1865, is the oldest United Nations (UN) specialized agency for digital technologies (ICTs).
• **Headquarters** – Geneva, Switzerland.
• **Membership** – 194 member states and more than 1000 companies, universities and international and regional organizations.
• **3 sectors** – ITU-T (Standardization), ITU-D (Development), and ITU-R (Radiocommunication).
• **Radiocommunication Bureau** – It manages the global radio-frequency spectrum and satellite orbit resources, ensuring countries and technologies (like 5G, aviation, space missions, etc.) don't interfere with one another.

Miscellaneous

World Earth Day, 2025

World Earth Day was recently celebrated to create environmental awareness and action for a sustainable planet.

• **Celebrated on** – 22nd April, every year.
• **Theme** – Our Power, Our Planet.
• **Objective** – To drive positive environmental change through renewable energy, sustainable practices, and supportive policies.
• **Historical roots** – Initiated by Senator Gaylord Nelson in response to environmental crises, the 1st Earth Day in 1970 mobilized 20 million Americans.
• **Global evolution** – Earth Day has grown into a global movement, engaging over 1 billion people in 192 countries in environmental protection efforts.

National Yak Day, 2025

Recently, Nepal observed its first 'National Yak Day' on April 20, 2025, recognizing the yak's significant cultural, ecological, and economic contributions in the Himalayan region.

• **ICIMOD's call to action** – International Centre for Integrated Mountain Development (ICIMOD) urged stakeholders to prioritize the yak in sustainable development agendas across the Hindu Kush Himalaya (HKH).

• **Historical role** – The indigenous communities like the Sherpa, Tamang, Thakali, Rai, and Limbu in yak herding, linking it to food security, cultural identity, and biodiversity conservation.

• **Yaks** – Wild yaks (Bos mutus) and domesticated yaks (Bos grunniens) are inhabit on the high-altitude alpine tundra across the Himalayan region.

• **Biological adaptations** – It include a large lung capacity, smaller red blood cells, and long, shaggy hair for survival in low-oxygen environments.

• **Conservation status** – IUCN – Vulnerable (Wild yaks).

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