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India's First CBDC-Based PDS — e-Rupee Meets Food Security

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SUBJECTS COVERED**ECONOMY****SCIENCE & TECH****POLITY****CURATED & WRITTEN BY****Bharat Choudhary**

UPSC Educator & Content Creator •

[linkedin.com/in/epicbharat](https://www.linkedin.com/in/epicbharat)

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WHY IN NEWS

Union Home Minister Amit Shah launched India's first CBDC (Central Bank Digital Currency)-based Public Distribution System in Gandhinagar, Gujarat on February 15, 2026 — a world-first application of programmable digital currency for food subsidy delivery, integrating the e-Rupee into India's Rs 2 lakh crore PDS architecture.

WHAT IS CBDC?

Central Bank Digital Currency (CBDC) is digital legal tender issued directly by a country's central bank. Unlike cryptocurrency (decentralised, not legal tender) or digital payments (UPI/NEFT moving existing bank balances), CBDC is **money itself** — a direct liability of the central bank in digital form.

Feature	Cash	UPI	Cryptocurrency	CBDC (₹)
Issuer	RBI	Payment intermediary	Algorithm/protocol	RBI
Legal tender	Yes	No (moves legal tender)	No	Yes
Physical	Yes	No	No	No
Programmable	No	Limited	Yes	Yes
Traceable	No	Yes	Pseudonymous	Yes

India's e-Rupee (₹): RBI launched the CBDC pilot in **December 2022** in two segments:

₹-W (Wholesale): For interbank settlement of government securities

₹-R (Retail): For everyday transactions; distributed through banks to users' digital wallets

HOW CBDC-PDS WORKS

Traditional PDS flow:

Problems: **Leakage** (~30–40% historically), ghost beneficiaries (fake ration cards), diversions, pilferage at warehouse and FPS levels.

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Key advantage — programmability:

e₹ tokens are **programmable** — they carry metadata specifying they can only be used for food grain purchase at registered FPS (Fair Price Shop)

Cannot be transferred to other uses (cannot buy alcohol, gold, or electronics)

Auto-expire if not used in a set period — preventing black market hoarding of government tokens

Complete **audit trail** — every token has a traceable history from issuance to consumption

THE PDS CONTEXT

India's PDS operates under the **National Food Security Act (NFSA), 2013** — one of the world's largest food distribution systems:

Coverage: ~81 crore beneficiaries (65–67% of India's population)

Scale: ~61 million tonnes of food grains distributed annually

Subsidy: ~₹2 lakh crore per year (rice at ₹3/kg, wheat at ₹2/kg, coarse cereals ₹1/kg; now free under PM Garib Kalyan Anna Yojana extended)

FPS (Fair Price Shops): 5.4+ lakh shops nationwide

PM Garib Kalyan Anna Yojana (PMGKAY): Extended through December 2028 — provides **free food grains** to 81 crore NFSA beneficiaries; merged with NFSA from January 2024.

PILOT DESIGN — GUJARAT

Initial districts: Ahmedabad, Anand, Valsad, Surat (four districts; ~2 crore beneficiaries) **Technology stack:**

CBDC wallet: RBI-issued through participating banks (SBI, Union Bank, Canara, HDFC)

Aadhaar eKYC: Beneficiary identification

FPS-level POS: QR-code scanner connected to CBDC network

Backend: Real-time settlement via RBI's CBDC infrastructure

Expansion: Puducherry, Chandigarh, Dadra & Nagar Haveli, Daman & Diu — chosen for UT status (central government has direct control over PDS, making reform easier).

GLOBAL CONTEXT — WHY INDIA'S PILOT MATTERS

Over 130 countries are exploring CBDCs (BIS survey 2025). However, India is the **first major economy to operationalise CBDC within a large-scale social welfare distribution system**.

Country	CBDC Status
China	e-CNY (Digital Yuan) — 17+ cities; pilot since 2020
Bahamas	Sand Dollar — first fully deployed CBDC (2020)
Nigeria	eNaira — launched 2021; low adoption
EU	Digital Euro — pilot phase 2025
India	₹ retail pilot since Dec 2022; CBDC-PDS 2026

The CBDC-PDS integration creates a **global template** for governments seeking to eliminate subsidy leakage using programmable money.

DBT INTEGRATION AND FUTURE SCOPE

India's **DBT (Direct Benefit Transfer)** architecture — which transferred ₹36 lakh crore to beneficiaries since 2013 — currently uses bank accounts. CBDC upgrades this by eliminating:

Unspent/diverted DBT: Bank transfers can be repurposed; ₹ tokens for PDS cannot

Intermediary risk: CBDC wallet is directly with RBI; banks are mere distribution channels

Financial inclusion gap: CBDC wallets can be held by those without full bank accounts (feature phones compatible)

Future applications: MGNREGS wage payments, PM-Kisan instalments, scholarship disbursement — all could use programmable ₹ tokens tied to specific end-use.

UPSC RELEVANCE

*CBDC, e-Rupee, RBI CBDC pilot (December 2022), ₹-W and ₹-R, NFSA 2013, PMGKAY, DBT, programmable money, Aadhaar-PDS linking, Fair Price Shops. **Mains GS-3:** Digital economy; financial inclusion; food security; PDS reforms; RBI monetary policy instruments. **GS-2:** Social welfare schemes; Aadhaar and privacy concerns; federalism in food security.*

★ FACTS CORNER — KNOWLEDGEPEDIA

E-RUPEE / INDIA CBDC:

Launched by: **RBI** | Pilot start: **December 2022**

Two types: **e₹-W** (wholesale/interbank) + **e₹-R** (retail/everyday)

CBDC-PDS launched: **February 15, 2026** | By: **Amit Shah** | Location: **Gandhinagar, Gujarat**

Initial districts: Ahmedabad, Anand, Valsad, Surat

Key feature: **Programmability** — tokens encoded for single-purpose use (food grains only)

INDIA PDS — SCALE:

Governing law: **National Food Security Act (NFSA), 2013**

Beneficiaries: **~81 crore** (~67% population)

Food grains distributed annually: **~61 million tonnes**

Annual subsidy: **~₹2 lakh crore**

Fair Price Shops: **5.4+ lakh** nationwide

PMGKAY: Free food grains for NFSA beneficiaries; extended through **December 2028**

DBT (DIRECT BENEFIT TRANSFER):

Launched: **January 1, 2013**

Total transfers since 2013: **₹36+ lakh crore**

Benefits: Eliminated ~9 crore ghost/duplicate beneficiaries; saved **~₹2.73 lakh crore** (as of 2025)

GLOBAL CBDCS:

First CBDC: **Sand Dollar** (Bahamas, 2020)

China: **e-CNY** (Digital Yuan, 17+ pilot cities)

BIS survey 2025: **130+ countries** exploring CBDCs

OTHER RELEVANT FACTS:

Aadhaar-PDS seeding (biometric authentication at FPS): Introduced under NFSA to reduce ghost beneficiaries

India's DBT Bharat portal: Tracks all DBT schemes in real time

NFSA entitlement: Priority Households — 5 kg/person/month; Antyodaya Anna Yojana (poorest) — 35 kg/household/month

Sources: AffairsCloud, PIB, The Hindu

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Bharat Choudhary

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