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1. Quantum Computing Threat to Banking Sector Cryptography

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Syllabus — GS-III: Science and technology applications; information technology; basics of cyber security and internal-security challenges through communication networks

Prelims — General Studies Paper I: General Science; current events of national and international importance



Quantum-enhanced to quantum-safe: Banks prepare for the next big threat

Akash Mandal & Nameera Anjum
Mumbai/New Delhi, Oct 21

THE BANKING sector is moving its focus towards cybersecurity as artificial intelligence (AI) poses threats in financial systems. Regulators have also stepped up, mandating cyber preparedness across the sector.

The Reserve Bank of India issued a new cybersecurity and technology-resilience framework for commercial banks in July, setting requirements for IT governance, cyber-risk management and incident response, while the Securities and Exchange Board of India introduced an IT Resilience Index for market infrastructure institutions in August to measure the robustness of their critical IT systems and identify weaknesses early. While these measures may address the threats confronting the sector today, a new type of threat is emerging — one that could challenge the mathematical foundations of some of the encryption used to protect digital systems: quantum computing.

Traditional computing stores and processes data in a unit called a bit, which can have a value of either 0 or 1. In quantum computing, the unit is called a quantum bit, or qubit.

Unlike a classical bit, a qubit can exist in a combination of 0 and 1, a property known as superposition. Quantum algorithms are designed to manipulate quantum states so that the probability of useful answers is amplified, and that of the incorrect answers reduced. This gives quantum computers an edge over traditional computers for certain types of problems. While this could have striking use cases, it also opens the door to a new set of threats.

The threat for banks

"Right now, we are talking about AI threats, right? In a couple of years, we will be talking about cryptographic threats due to quantum computing. We will be talking about a lot of other things that are not even there in the market yet," Sarthak Dubey, Co-founder and COO of Mitigata, a full-stack cyber resilience firm, told *The Indian Express*. "What people have been talking about quantum becomes a very major risk starting, say, 2030," he added.

Modern cryptography protects digital communications by relying on mathematical problems that are difficult for conventional computers to solve. The quantum threat could undermine cryptographic building blocks used across the digital infrastructure for functions like authentication, secure communication, key exchange, and digital signatures. "Essentially, when we talk about the existing ways of security, there are encryption mechanisms that keep systems safe and secure in certain ways. And there are ways to decrypt them, which requires a significant amount of compute, and a significant amount of hardware power to make sure that you are able to decrypt those particular encryptions and get into that particular system," said Dubey.

"Now, with quantum, and what people call the quantum deadline, is that by 2029 or 2030 the quantum computers would be smart enough to decrypt any of the historical encryptions that are present," he said. Several technology companies and governments have been working towards translocating their systems well before such a capability emerges, although there is no universally agreed date for when a cryptographically relevant quantum computer will arrive.

Harvest Now, Decrypt Later

One reason why financial institutions can't just wait for quantum computers to become powerful enough is a threat called Harvest Now, Decrypt Later, or HNDL.

Under this model, an attacker can intercept and store encrypted information today, with the expectation of decrypting it once sufficiently powerful quantum computers arrive. This makes data that needs to remain confidential for many years particularly vulnerable.

According to the Digital Threat Report 2025-26 by CERT-In, CSIRT-Fin and SISA, the broader quantum threat has yet to reach full-scale realisation, but HNDL strategies are already active.

This is why the transition to post-quantum cryptography — encryption algorithms resistant to attacks from quantum computers — has to begin before the threat materialises.

The more limited late task involves identifying where vulnerable cryptography is being used, and replacing it before sufficiently capable quantum systems emerge. Crypto-agility is the ability of an organisation to replace cryptographic algorithms and protocols as security requirements change.

For banks, this is crucial because their technology infrastructure is spread across legacy systems, cloud environments, third-party vendors, payment platforms and multiple layers of security infrastructure. FULL REPORT ON

• THE QUANTUM THREAT

MODERN CRYPTOGRAPHY uses math problems that are hard for traditional computers to solve, to secure digital communications

QUANTUM THREATS could undermine cryptography's foundations across digital infra

BANKS NEED TO immediately identify and upgrade cryptography, and replace it before sufficiently capable quantum systems arrive

epaper.indianexpress.com

New Delhi

The Indian EXPRESS Mon, 13 October 2026
https://epaper.indianexpress.com/c/81276290

Original newspaper extract reproduced for reference; corrected and qualified study notes follow.

WHY IN NEWS

RBI issued commercial-bank cybersecurity and technology-risk directions in July 2026, and SEBI introduced an IT Resilience Index for market infrastructure institutions in August 2026. CERT-In, CSIRT-Fin and SISA launched the Digital Threat Report 2025–26 on July 13, 2026. The article discusses quantum risk, but its 2029–2030 estimate is an industry forecast, not an established deadline.

Why Quantum Computers Threaten Encryption

Public-key cryptography such as RSA and elliptic-curve cryptography relies on mathematical problems that are difficult for classical computers at suitable key sizes. Cryptography also includes symmetric encryption and hashing, whose exposure to quantum attacks differs from that of RSA and elliptic-curve systems.

A qubit can be in a superposition of the states 0 and 1. Quantum algorithms use interference and, in many cases, entanglement to obtain advantages on particular problems; this does not make quantum computers faster at every task. Shor's algorithm is relevant to factoring and discrete logarithms used in widely deployed public-key cryptography.

A sufficiently large, fault-tolerant quantum computer could break widely used RSA and elliptic-curve systems, threatening authentication, secure key establishment and digital signatures. This does not mean that all encryption becomes insecure in the same way.

The article quotes industry estimates of cryptographically relevant quantum computers arriving around 2029–2030. This is not a scientific consensus or a fixed deadline; capability forecasts vary widely, while migration must account for long-lived data and the time needed to replace vulnerable systems.

The Harvest Now, Decrypt Later Threat

HNDL (Harvest Now, Decrypt Later) is a strategy where an attacker intercepts and stores encrypted data today, intending to decrypt it once sufficiently powerful quantum computers become available.

Data that must remain confidential for many years, including financial records and sovereign communications, can face exposure if adversaries capture it now and can later defeat the cryptography protecting it. The risk depends on the algorithms, key-management arrangements and required secrecy period.

Security agencies warn that adversaries could collect encrypted information now for later quantum-enabled decryption. This is a present planning risk; the material reviewed does not independently establish the scope of specific ongoing HNDL campaigns.

Financial institutions cannot wait for quantum computers to become powerful enough to act; **transition must begin before** the threat fully materialises.

India's Regulatory Response to the Threat

RBI's July 31, 2026 instrument is titled Reserve Bank of India (Commercial Banks – Cybersecurity, Technology: Risk, Resilience and Assurance Framework) Directions, 2026. It consolidates requirements for technology governance, cyber-risk management, resilience, incident response and assurance; its existence should not be read as proof of a universal 2029–2030 quantum deadline.

SEBI issued its IT Resilience Index circular for market infrastructure institutions on August 24, 2026. It provides a framework for assessing the resilience of critical market IT systems; general cyber-resilience obligations should be distinguished from specific post-quantum migration requirements.

CERT-In confirms that it, CSIRT-Fin and SISA jointly launched the Digital Threat Report 2025–26 on July 13, 2026. The Indian Express article highlights its discussion of the potential future quantum threat and HNDL exposure in the financial sector.

These measures strengthen financial-sector cyber preparedness. The article argues that institutions should incorporate quantum risk into that work; broad cybersecurity rules alone do not establish a specific mandatory quantum-migration deadline.

What Banks Must Do: Crypto-Agility and PQC

Post-quantum cryptography comprises cryptographic algorithms intended to resist attacks using both classical and quantum computers. It includes key-establishment mechanisms and digital signatures, not only encryption. Migration to standardised PQC is a principal defence against the quantum threat to current public-key systems.

Crypto-agility — the ability of an organisation to replace cryptographic algorithms and protocols as security requirements change — is identified as the essential institutional capability banks must build.

An immediate task is to inventory cryptographic dependencies across legacy systems, cloud services, vendors and payment platforms, identify vulnerable algorithms and long-lived sensitive data, and plan a prioritised, tested migration to suitable post-quantum standards.

Banks face a particular complexity because their technology infrastructure is **spread across multiple layers** — legacy systems, cloud environments, third-party vendors and payment platforms — each requiring independent assessment and migration.

HIGH-YIELD FACTS

RBI directions — Commercial Banks – Cybersecurity, Technology: Risk, Resilience and Assurance Framework Directions, issued July 31, 2026

SEBI IT Resilience Index — Circular for market infrastructure institutions issued August 24, 2026

Digital Threat Report publishers — Digital Threat Report 2025-26 jointly published by CERT-In, CSIRT-Fin and SISA

Quantum capability forecast — The article cites 2029–2030 industry estimates; no universally accepted date exists for a cryptographically relevant quantum computer

Classical bit and qubit — A bit is 0 or 1; a qubit permits superposition. Algorithmic advantage depends on the problem and the use of quantum operations and interference

HNDL full form — Harvest Now, Decrypt Later — a cyberattack strategy of storing encrypted data today for future quantum decryption

Crypto-agility definition — The ability of an organisation to replace cryptographic algorithms and protocols as security requirements change

VALUE ADDITION

REPORTS, BODIES AND INSTRUMENTS

Digital Threat Report 2025-26 — CERT-In, CSIRT-Fin and SISA

Reserve Bank of India (Commercial Banks – Cybersecurity, Technology: Risk, Resilience and Assurance Framework) Directions, 2026 — July 31, 2026

SEBI IT Resilience Index for Market Infrastructure Institutions (August 2026)

EXAMPLES FOR THE ANSWER

NIST finalised its first three principal post-quantum standards on August 13, 2024: FIPS 203 (ML-KEM, key establishment), FIPS 204 (ML-DSA, digital signatures) and FIPS 205 (SLH-DSA, digital signatures). This is a concrete example of standardisation preceding large-scale cryptographic migration.

A bank's crypto-inventory and staged migration illustrate anticipatory governance: information captured today may remain sensitive long after the systems protecting it are replaced. NIST's migration project offers a documented example for answers on institutional preparedness.

2. India's Russian Oil Imports and Ukraine Peace Mediation

GS-II · Prelims + Mains · India-Russia-Ukraine energy-diplomacy nexus · Indian Express

Syllabus — Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora

Prelims — Current Events of National and International Importance


Trump's deal, and the India oil question

Behind India's plan for Russia-Ukraine peace: Grain, oil, and Trump

Original newspaper extract reproduced for reference; corrected and qualified study notes follow.

WHY IN NEWS

The United States has temporarily authorised covered Russian-diesel transactions while a new sanctions law creates potential tariff exposure for certain major buyers of Russian energy. Separately, India has put forward a peace proposal to Ukraine, which Kyiv described as broad. The article connects these developments to energy security, Black Sea trade and diplomacy after Russia's February 2022 full-scale invasion.

The US-Russia Diesel Deal and India's Exposure

The Indian Express reports an announced arrangement for Russian diesel supplies to the United States and other markets. The independently verifiable legal step is OFAC General License 135 of October 9, 2026, temporarily authorising specified Russian-origin diesel transactions, including importation into the United States, subject to its conditions and exclusions.

Section 115 of the Lindsey O. Graham Sanctioning Russia and Iran Act of 2026 permits presidential waivers subject to a national-interest certification and reporting to Congress. Whether a particular transaction requires or receives such a waiver must be distinguished from OFAC's separate general-licence authorisation.

Section 113 provides for duties of up to 100% on goods from specified countries, including qualifying top-five buyers making new Russian oil or gas purchases after the statutory trigger date and top-five facilitators of sanctions evasion. It is not an automatic 100% tariff on every purchaser. The article argues that US diesel imports create a negotiating inconsistency India could raise.

According to the Indian Express, the Ministry of External Affairs said India was examining the announced deal's implications for international energy markets and that the issue had been discussed at a high level. This should not be presented as an Indian endorsement of all Russian-diesel transactions or as a settled sanctions interpretation.

The article argues that India could raise US purchases of Russian-origin diesel in tariff consultations with Washington. Its reference to 50% tariffs concerns the earlier tariff dispute, not a uniform rate newly imposed throughout the first half of 2026; US Customs confirmed removal of the additional Russia-related 25% India tariff effective February 7, 2026.

Why Russia Remains India's Top Crude Supplier

The Indian Express describes Russia as India's largest crude supplier and puts its August share at nearly half. Its accompanying chart records 2.06 million barrels per day from Russia in August. These are the publication's tracking estimates, rather than a verified official monthly series.

Russia's discounted crude became commercially attractive to Indian refiners after the 2022 invasion and Western restrictions. The article links subsequent changes in purchases to sanctions, discounts and supply conditions; the effects of restrictions on individual companies depend on their dates and scope.

The chart reproduced in the Indian Express records Russian crude imports of 2.82 mbpd in July and 1.87 mbpd in September 2026. These provider-dependent estimates should not be confused with a 2025 peak. The article discusses sanctions and West Asian supply disruptions, but disruption at Hormuz should not be treated as a direct explanation for all changes in Russian-origin flows.

In the article's chart, Russia's share is 42.3% in May, peaks at 56.0% in July, and falls to 35.6% in September. These are the publication's estimates; explanations involving sanctions, tanker availability and wider market disruption are analysis rather than conclusions established by the chart alone.

OFAC has used time-limited licences to permit specified energy transactions amid supply pressures. Such licences have defined conditions and expiry dates; they do not remove every sanction or establish that all purchases of Russian energy are permitted.

Month in article's 2026 chart	Russian crude imports (mbpd)	Share of total (%)
January	1.21	23.3%
May	2.03	42.3%
July	2.82	56.0%
September	1.87	35.6%

India's Peace Proposal and Ukraine's Response

India put forward the proposal to Ukraine. Ukraine's Foreign Minister Andrii Sybiha described it as the broadest of offers received from India, the United States, Türkiye and Egypt. The article also reports that Vladimir Putin said Narendra Modi had useful ideas; it does not say that Modi first announced having those ideas or that Ukraine originated this proposal.

According to the article, the emerging proposal concerns Black Sea trade and protection of energy infrastructure. Kyiv's willingness to consider a ceasefire along the line of contact is discussed separately. These reported contours are not a publicly agreed or fully disclosed peace settlement.

The article identifies maritime grain trade as an interest for both parties. Its estimate of 42–44 million tonnes, or 77–81% of grain exports, refers to RUSSIA's trade through southern ports, not Ukraine's exports. The figures remain attributed to the publication because an independently matching official series was not located.

India has repeatedly advocated dialogue and diplomacy. The PMO's account of the August 31, 2026 meeting with Vladimir Putin in Bishkek confirms discussion of the Ukraine conflict. The article portrays the current proposal as a move toward more active facilitation; that is an analytical assessment, not proof of an agreed mediation mandate.

The Indian Express reports Western intelligence concerns about further Russian attacks on Ukrainian electricity infrastructure before winter. This is attributed reporting, not an independently verified forecast of Russia's operational plans.

India's Strategic Calculus and What Remains Uncertain

India faces a balancing problem between possible US tariff measures, energy security and its longstanding defence relationship with Russia. The article treats these as incentives for diplomacy; avoidance of further tariffs or Russian acceptance of a proposal is not assured.

India maintains communication with both Kyiv and Moscow and has raised the safety of civilian shipping and Indian seafarers. An October 8, 2026 India–Liberia statement condemned attacks on commercial vessels and loss of seafarers' lives. These channels may assist diplomacy but do not by themselves establish neutral-mediator status.

The article argues that US support would matter to the feasibility of an Indian peace initiative. A successful ceasefire could align with Washington's stated diplomatic objectives, but any US endorsement or tariff concession remains contingent.

The temporary Russian-diesel licence was issued by the United States' OFAC, not by India. Its relevance to India's negotiations is the argument about consistent treatment of Russian-energy purchases; it does not automatically grant India a tariff waiver or settle India's role in peace diplomacy.

HIGH-YIELD FACTS

Russia's full-scale invasion of Ukraine — February 24, 2022; followed by expanded Western sanctions and a sharp increase in India's purchases of Russian crude

Lindsey O. Graham Act — Public Law 119-111, enacted September 18, 2026; Section 113 provides for duties of up to 100% for specified qualifying countries, with statutory conditions and exceptions

OFAC General License 135 — Issued October 9, 2026; covered Russian-origin diesel transactions are authorised until 12:01 a.m. US Eastern Daylight Time on April 7, 2027, subject to the licence's exclusions

Emergency oil release — On October 2, 2026, G7 leaders announced mobilisation of 100 million barrels through the IEA framework. This preceded the October 9 diesel licence. G7 means seven countries, with the EU also represented; it does not mean 27 countries

Ukraine agricultural exports — Ukraine's Foreign Ministry reported in May 2026 that agricultural exports exceeded $22.5 billion and represented around 56% of total exports. Do not relabel this as an Indian-style 2025–26 financial-year statistic

Black Sea ports — Odesa, Chornomorsk and Pivdennyi are Ukraine's three major deep-water ports cited in the article. Its figure of around 90% of agricultural exports is a source-attributed estimate, not an independently established share for every year

Civilian shipping — India has raised seafarer safety and condemned attacks on commercial vessels. The article reports Indian deaths and injuries; its chronology should not be converted into an unsupported claim of continuous advocacy since mid-2024

Bishkek meeting — The PMO records Narendra Modi's meeting with Vladimir Putin on August 31, 2026, including discussion of Ukraine and dialogue; the claim that this occurred at every meeting since 2022 is broader than the verified record

VALUE ADDITION

DATA YOU CAN QUOTE

Ukraine harvest and export estimates — The article cites roughly 81 million tonnes of grains and oilseeds for 2026–27 and 64.4 million tonnes for export. FAO's August 31, 2026 update instead projects a combined grain-and-oilseed harvest of 84.18 million tonnes; the article's export estimate was not independently confirmed

Ukraine storage risk — FAO's August 31, 2026 assessment estimated a storage shortfall of UP TO 11 million tonnes by November 2026, not a minimum of 11 million tonnes

US diesel price — EIA's national weekly on-highway diesel series reached $6.529 per gallon on September 21, 2026 and was $6.199 on October 5. This is diesel, not a general petrol or all-fuel price; the article links high prices to pressure for supply measures

REPORTS, BODIES AND INSTRUMENTS

Lindsey O. Graham Sanctioning Russia and Iran Act of 2026 (US Congress)

OFAC General License 135 — US Department of the Treasury, Office of Foreign Assets Control, October 9, 2026

EXAMPLES FOR THE ANSWER

The article offers an example of using a counterpart's policy inconsistency as diplomatic leverage. This is distinct from the WTO's most-favoured-nation principle, which concerns non-discrimination among trading partners and cannot be established merely by comparing US fuel purchases with its criticism of Indian purchases.

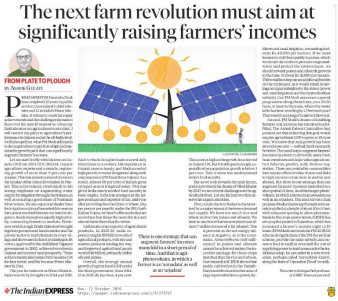
The Black Sea Grain Initiative was brokered by the United Nations and Türkiye in July 2022 to facilitate maritime exports during the war; it ended in July 2023 after Russia did not extend its participation. It offers a historical example of negotiated shipping arrangements, not proof that India's current proposal is an agreed successor.

3. Agri-Photovoltaics and Income Doubling: India's Farm Challenges

GS-III · Prelims + Mains · Farmer income augmentation strategies · Indian Express

Syllabus — Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System — objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions; economics of animal-rearing

Prelims — Agriculture — schemes, food security, agri-technology



The next farm revolution must aim at significantly raising farmers' incomes

FROM PLATE TO PLOUGH

Original newspaper extract reproduced for reference; corrected and qualified study notes follow.

WHY IN NEWS

In the Indian Express, agricultural economist Ashok Gulati argues that India faces a mismatch between farm output and demand and has not fulfilled the national ambition of doubling farmers' real incomes. He proposes agri-photovoltaics and revised crop incentives. These are an economist's diagnosis and proposals, not newly approved government schemes.

Gujarat Agriculture: What Worked

Research by Gulati and colleagues estimates Gujarat's agricultural growth at about 9.2% annually during 2001–02 to 2013–14. Their comparison with other states and periods supports discussion of a strong growth episode; it should not be treated as a universal ranking across all Green Revolution indicators.

The research associates Gujarat's growth with irrigation expansion, water management, rural power reforms, agricultural extension and market links. These are identified contributors, rather than a single-factor causal explanation.

Bt cotton was first approved for commercial cultivation in India in 2002, during the Vajpayee government. Gulati identifies its adoption as one contributor to Gujarat's agricultural performance; the wider rural-prosperity claim is an assessment of several interacting factors.

The Economic Survey 2025–26 reports gross irrigated area at 55.8% of gross cropped area in 2022–23; the op-ed rounds the current position to almost 60%. PM Fasal Bima Yojana provides crop insurance and should not be described as an irrigation-expansion programme.

India is the world's leading rice exporter and, on the production data cited by APEDA and the government in 2026, its largest rice producer. Free foodgrain is provided under PM Garib Kalyan Anna Yojana. The op-ed says rice stocks exceed four times the norm; that ratio needs a dated stock position and the applicable quarterly buffer norm.

Two Structural Problems Demanding Attention

Gulati argues that procurement and subsidies encourage excess rice and wheat relative to demand while India remains import-dependent for some pulses and edible oils. His estimate of nearly 7 million tonnes of rice being diverted to ethanol is retained as an article-attributed figure; allocation, actual lifting and conversion are different measures.

Gulati questions the net-energy and environmental case for rice-based ethanol and estimates paddy input subsidies in Punjab–Haryana at almost Rs 40,000 per hectare. The draft incorrectly applied his energy-balance claim to paddy cultivation itself. A monetary subsidy figure does not establish a physical energy balance, which depends on the production system and accounting boundary.

Gulati argues that self-reliance in pulses and oilseeds requires competitive incentive packages, alongside market access and productivity improvements. This is a policy argument, not proof that self-reliance is mathematically impossible under every other policy mix.

The Doubling Farmers' Income Committee's 10.4% annual requirement referred to growth in FARMERS' REAL INCOME over the original target period, not agricultural GDP. Gulati argues that the income-doubling ambition remains unfulfilled. Sectoral growth of around 4% cannot be compared mechanically with household-income growth without accounting for costs, prices and non-farm earnings.

Gulati estimates average annual real agricultural growth at around 4% from 2014–15 to 2025–26. Retain this as the author's period-specific estimate; agricultural output growth and growth in real income per farm household are different indicators.

Agri-Photovoltaics: The Dual-Role Strategy

Agri-photovoltaics combines agricultural production and solar electricity generation on the same land. Elevated panels with adequate spacing are one design; the article's 10–11-foot height is an example, not a universal technical specification. Crop, machinery, sunlight and local conditions determine the appropriate layout.

ICRIER describes a farmer-owned agri-PV pilot in Rajasthan, and Gulati estimates potential income gains of eight to ten times the baseline in the model discussed. This is case-specific potential, not a guaranteed or universally demonstrated multiplier; capital cost, finance, tariff, crop yields and grid access affect returns.

Gulati proposes adapting PM-KUSUM with support analogous to PM-Surya Ghar and a remunerative feed-in tariff linked to avoided rural power-supply costs. The suggested subsidy parity and tariff formula are proposals, not existing uniform PM-KUSUM entitlements.

The article proposes branding this as **'Surya Khet Kranti'**, analogous to 'Operation Flood' in milk, signalling the ambition of a transformative, mission-mode programme.

Crop Diversification: Rewarding the Right Choices

Shifting from **paddy to pulses and oilseeds** in the Punjab-Haryana belt would relieve groundwater pressure, protect the environment, and reduce input subsidy outgo for both states and the Centre.

Gulati proposes paying pulses and oilseeds growers Rs 35,000 per hectare, arguing that savings in power, irrigation and fertiliser subsidies could offset the cost. Fiscal neutrality is his proposal's premise and requires location-specific calculation, implementation arrangements and verification.

The op-ed proposes a Haryana pilot with 50:50 Union–State funding and cites groundwater decline of about 1.7 feet a year. The decline figure is the author's estimate, without a specified statewide measurement period in the article; actual groundwater trends vary by location and season.

The diversification push must be accompanied by **efficient value chains and links to high-income consumers** in metros and export markets, since fruits, vegetables, poultry, fish and milk are perishable and cannot rely on public procurement alone.

HIGH-YIELD FACTS

ICRIER agri-PV case — Farmer-owned pilot at Kundanpur, Bassi, near Jaipur in Rajasthan; project economics depend on design, tariffs and financing

Agri-PV panel height — The article gives 10–11 feet as an illustrative elevated-panel design, not a universal standard

Agri-PV income potential — Gulati cites eight- to ten-fold potential in the model discussed; this is not a guaranteed outcome for all farms

Doubling Farmers' Income requirement — 10.4% annual growth in farmers' REAL INCOME over the original target period, not 10.4% agricultural GDP growth

Agricultural growth estimate — Around 4% annually during 2014–15 to 2025–26, as estimated in Gulati's op-ed; distinguish sectoral output from household income

Bt cotton approval year — 2002, under Atal Bihari Vajpayee government

Agricultural exports, 2025–26 — PIB's August 2026 factsheet reports $54.70 billion; the op-ed cites an approximate $53 billion, potentially reflecting an earlier estimate or coverage difference

Haryana groundwater — The op-ed cites a decline of about 1.7 feet per year; the measurement period and spatial coverage are not specified

VALUE ADDITION

DATA YOU CAN QUOTE

Paddy input subsidies — About Rs 40,000 per hectare in the Punjab–Haryana example, according to Gulati's estimate; not a uniform statutory payment to every farmer

Proposed diversification incentive — Rs 35,000 per hectare for pulses and oilseeds growers; a policy recommendation, not an announced nationwide benefit

Rice for ethanol — Nearly 7 million tonnes in Gulati's article; distinguish proposed allocation from actual diversion and conversion

Agricultural imports, 2025–26 — The op-ed estimates about $40 billion and highlights edible oils and pulses; the exact total and commodity coverage were not independently confirmed

REPORTS, BODIES AND INSTRUMENTS

Ashok Dalwai Committee Report on Doubling Farmers' Income (Government of India)

PM-KUSUM (Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan) — Ministry of New and Renewable Energy

PM Fasal Bima Yojana — Ministry of Agriculture and Farmers Welfare

PM Garib Kalyan Anna Yojana — Ministry of Consumer Affairs, Food and Public Distribution

EXAMPLES FOR THE ANSWER

Operation Flood began in 1970 and its third phase ended in 1996. Led by the National Dairy Development Board, it expanded the cooperative dairy model. Gulati invokes it as an institutional analogy for his proposed Surya Khet Kranti; the analogy does not establish equivalent economics for solar power.

Fraunhofer's German agri-PV experiments show that dual use can improve total land-use efficiency, but crop effects vary. The 2017 trial recorded lower yields beneath panels, while several crops benefited during the hot, dry 2018 season. Do not assume that every agri-PV installation preserves food output or delivers the same income gain.

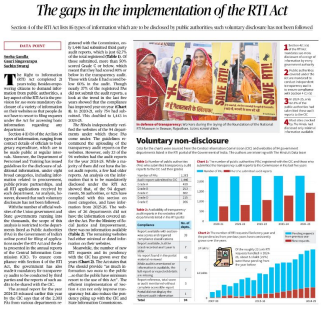
The EU's Common Agricultural Policy combines income support with environmental conditions and eco-schemes; area-based payments still exist. Eco-schemes under the 2023–27 CAP offer a comparative example of paying for specified environmental practices, rather than evidence that the EU has completely replaced area-based support with outcome payments.

4. RTI Act Section 4 Suo Motu Disclosure: Compliance Gaps

GS-II · Prelims + Mains · RTI Act Section 4 compliance · The Hindu

Syllabus — Important aspects of governance, transparency and accountability, e-governance- applications, models, successes, limitations, and potential

Prelims — Polity & Governance — Right to Information Act, Central Information Commission


The gaps in the implementation of the RTI Act

Section 4 of the RTI Act lists 16 types of information which are to be disclosed by public authorities; such voluntary disclosure has not been followed

DATA POINT

Voluntary non-disclosure

Original newspaper extract reproduced for reference; corrected and qualified study notes follow.

WHY IN NEWS

> The RTI Act's principal provisions came into force on October 12, 2005, completing 21 years on October 12, 2026. The Hindu examined CIC annual-report data for 2024–25 and websites of 94 Union government departments, reporting gaps in proactive disclosure and audit-report availability. Its website findings are a dated journalistic sample, not an audit of every public authority in India.

What Section 4 Actually Requires

Section 4(1)(b) contains 17 subclauses, (i) to (xvii), covering proactive publication of organisational, procedural, financial and other prescribed information. The information is to be updated annually. Section 4(2) separately requires regular suo motu disclosure through various means, including the internet; the statutory duty is not confined to websites.

The intent is to reduce the burden on citizens to file individual RTI requests for routine information; the Act directs authorities to provide 'as much information suo motu to the public' as possible.

DoPT's guidelines add disclosure requirements under eight broad heads, including procurement and public-private partnerships. Online publication of RTI applications and responses must respect statutory exemptions and removal of personal information; the instruction is not unrestricted publication of every application in full.

DoPT's guidelines require annual third-party audits of proactive disclosure, publication of the audit report and communication of the findings to the CIC. This is an administrative compliance mechanism supporting a statutory disclosure obligation, rather than a voluntary substitute for Section 4.

How Far Short Compliance Falls

The CIC Annual Report 2024–25 records 1,446 transparency audits among 2,303 registered public authorities: 62.8% when rounded to one decimal place. The article's 62.7% is an imprecise percentage, and its separate reference to 1,443 is inconsistent with the report and grade totals.

The CIC report records Grade A: 410, B: 253, C: 302, D: 215 and E: 266, totalling 1,446. Grades C–E together account for 783 authorities, or about 54.1%, scoring 80% or below; Grade E is below 60%.

Audit coverage rose from 754 public authorities in 2020–21 to 1,446 in 2024–25, an increase of about 92%. In 2024–25, 857 of the 2,303 registered authorities, or 37.2%, were outside the reported audit total. Use 1,446 consistently, not 1,443.

The Hindu found the latest audit report with section-wise scores on 33 of 94 department websites. Its remaining categories include older reports, no report, partial references and a portal that did not display relevant information. Absence of a published audit report is not identical to absence of every Section 4 disclosure.

The Hindu reported that it found no relevant Section 4 information on the Ministry of Social Justice and Empowerment portal during its check. Present this as the publication's observation at that time, not a permanent finding about every office under the ministry.

Audit-report availability in The Hindu's website check	Departments
Latest report with section-wise scores	33
Report available, but latest audit year older	7
No report found in material reviewed	43
Audit mentioned/information available; full report or expected details missing	7
Reference, score or audit mentioned without complete accessible report	3
Portal did not display relevant audit information	1
Total websites examined	94

RTI Request Volumes and Carried-forward Cases

CIC annual reports show a substantial long-run rise in requests reported by public authorities, with some year-to-year declines. The series is not an unbroken annual increase. These applications are handled by public authorities; they must not be confused with second appeals and complaints pending at the CIC itself.

For 2024–25, the CIC report records 23,05,042 requests available for handling by reporting public authorities: 17,95,024 new applications plus an opening balance of 5,10,018, or 22.1%. This opening balance alone does not establish how many requests remained at year-end or prove that disposals were lower than new receipts.

Effective proactive disclosure can reduce the need for citizens to seek routine information through individual applications. This is the rationale of Section 4(2); the article's data do not quantify how much of the backlog is caused by disclosure failures.

Better Section 4 compliance could reduce avoidable applications and some downstream appeals. It cannot by itself be assumed to eliminate pendency, which also depends on staffing, response quality, vacancies, procedures and disposal rates.

What Remains Unresolved

Section 4 is a mandatory legal duty. Information Commissions can order specified publication under Section 19(8)(a)(iii), while Section 20 provides penalties against public information officers for specified defaults. A poor transparency-audit grade does not itself trigger an automatic fine, but that does not make disclosure or audit compliance voluntary.

The Hindu's direct website check covers 94 Union government departments listed on the RTI portal. The separate CIC annual-report figures cover registered central public authorities. Neither is a complete measurement of compliance across all state and local public authorities.

Audit submission and disclosure quality are distinct measures. In the CIC grading scheme, Grade C covers scores above 70% and up to 80%; C or below includes lower grades. Counting a report as submitted is not a finding of full compliance.

The article points to the **gap between guideline issuance and website reality** as the core governance failure, suggesting that monitoring and enforcement architecture needs independent strengthening beyond the CIC's annual report.

HIGH-YIELD FACTS

RTI anniversary — Most provisions came into force October 12, 2005; 21 years were completed in 2026, not 2025

Section 4(1)(b) — 17 subclauses, including the final category of other prescribed information; annual updating is required

Total PAs registered with CIC — 2,303 Public Authorities as of 2024-25

Transparency audits, 2024–25 — 1,446 of 2,303 registered public authorities, or approximately 62.8%

Nodal department for RTI guidelines — Department of Personnel and Training (DoPT) issues guidelines on Section 4 compliance

Oversight body for compliance — Central Information Commission (CIC) receives third-party transparency audit reports

Departments verified directly — The Hindu independently verified websites of 94 Union government departments listed in the RTI portal

Opening RTI balance, 2024–25 — 5,10,018 carried-forward requests among 23,05,042 requests available to reporting public authorities; this is not CIC appeal pendency

VALUE ADDITION

DATA YOU CAN QUOTE

Audit coverage growth — 754 in 2020–21 to 1,446 in 2024–25, approximately a 92% increase

Website findings — The Hindu found no audit report on 43 of 94 department websites. Separately, it reported 26 websites without the Section 4 information examined; these are different indicators

REPORTS, BODIES AND INSTRUMENTS

Right to Information Act, 2005 — Section 4(1)(b) (Parliament of India)

CIC Annual Report 2024-25 — Central Information Commission

EXAMPLES FOR THE ANSWER

Sweden's tradition of public access to official documents dates to its 1766 Freedom of the Press Act and is reflected in its constitutional framework. It is a historical example of access-to-information rights; it should not be equated automatically with a modern duty to publish specified information online.

Section 19 of the UK's Freedom of Information Act 2000 requires covered public authorities to adopt and maintain publication schemes approved by the Information Commissioner. This provides a useful parallel to proactive disclosure under India's Section 4, while the two jurisdictions' coverage and enforcement mechanisms differ.

5. Caste Discrimination Experienced by Dalit Students Abroad

GS-II · Mains · Caste discrimination in diaspora · The Hindu

Syllabus — Issues relating to development and management of Social Sector/Services relating to Education, Human Resources



SPOTLIGHT

Radheshyam Jadhav

The caste thread travels overseas

Dalit students studying abroad hope to escape oppressive caste hierarchies, only to find that the dominant-caste diaspora has exported its prejudice into classrooms and social settings across borders

Original newspaper extract reproduced for reference; corrected and qualified study notes follow.

WHY IN NEWS

The Hindu uses the reported September 18 death of a second-year IIT Bombay student as context for a wider discussion of campus exclusion. It then presents Dalit students' accounts of discrimination abroad. The material reviewed does not establish caste harassment as the cause of that particular death, and overseas interview accounts should be presented as testimony rather than a finding about every university.

How Caste Crosses the Border

Interviewees describe some dominant-caste peers as second- or third-generation participants in elite higher education, with inherited social, economic and educational advantages. This does not establish that those students are second- or third-generation migrants; the draft confuses educational privilege with migration status.

Interviewees describe attempts to infer caste from speech, ringtones, appearance and questions about vegetarianism. These reported profiling practices are discriminatory and are not reliable methods of identifying an individual's caste.

One reported example is an ostensibly friendly touch used to check for a janeu, a sacred thread associated with some Hindu initiation traditions. The account illustrates intrusive profiling; wearing or not wearing a thread does not reliably establish caste identity.

Dalit interviewees tell The Hindu that some university WhatsApp groups became sites of caste-based exclusion after their backgrounds were inferred or disclosed. These are attributed accounts, not a finding that all Indian student groups operate this way.

Lived Experience in Foreign Universities

The Hindu reports that Sanjana Choudhary, a scholarship student from Madhya Pradesh at Oxford, experienced alienation after disclosing her caste and found support among other Dalit scholars. It links that experience to the creation of an Ambedkar forum; Oxford's own faculty site uses the name Oxford South Asian Ambedkar Forum.

Abhishek Bhosale, a SOAS doctoral researcher quoted by The Hindu, describes both everyday discrimination and the need to challenge dominant-caste narratives in academia. His institutional affiliation and the student society are corroborated by SOAS sources; the discrimination account remains his testimony.

Stanford art-history student Anika Singh tells The Hindu that caste-related alienation affected her mental health while she pursued anti-caste scholarship. This is her account of her experience, not a clinical finding or a claim that anti-caste scholarship itself caused the distress.

The students interviewed describe reliance on scholarships, constrained spending and, in some cases, support sent to families, alongside exclusion from social and academic networks. These experiences should not be generalised to every Dalit student abroad.

Structural Levers That Sustain the Hierarchy

Anika Singh argues in the article that dominant-caste donors and Indian-American lobbying networks can influence US universities' responses to caste. This is an interviewee's assessment of institutional power; the article does not independently prove that all such donors or universities act in concert.

The SOAS Dr. Ambedkar Society is a documented student-led forum for anti-caste discussion. Interviewees describe it as a source of solidarity and support; that description should not imply that every formal university welfare mechanism is absent.

Interviewees and anti-caste advocates call for responses that cross national borders, arguing that caste-based exclusion can persist in diaspora settings. This is a policy position grounded in reported experiences, not a claim that every Indian migrant reproduces caste discrimination.

Advocates seek explicit caste protection in UK equality law. However, the Equality Act 2010's existing race provisions can cover caste where the circumstances fall within ethnic origins, as recognised in Chandhok v Tirkey. It is inaccurate to say that Dalit students currently have no possible legal recourse; the scope depends on the facts and legal setting.

The Dissenting View and What Remains Unresolved

An unnamed Oxford media and communication fellow quoted in the article argues for shared national identity and cooperation among Indian students abroad. This is one interviewee's view, not the position of Oxford University or of all dominant-caste students.

Dalit scholars quoted in the article contest that view, arguing that exclusion and imposed identity cannot be solved simply by asking affected students to assimilate. The disagreement can be used to discuss substantive equality and the limits of formal inclusion.

The article leaves open how universities can make anti-caste safeguards effective. Some overseas institutions already explicitly include caste in nondiscrimination policies, including Brandeis and California State University. Their existence does not establish perfect enforcement, but it disproves a blanket claim that foreign universities have provided no institutional response.

The article raises a question about whether donor relationships affect institutional independence in responding to caste complaints. Treat this as a governance issue requiring case-specific evidence, rather than a proven explanation for all universities' policies.

HIGH-YIELD FACTS

Oxford forum — Oxford's Faculty of Law identifies the Oxford South Asian Ambedkar Forum; use that name rather than treating the newspaper's shortened variant as the formal title

Dr. Ambedkar Society, SOAS — A student-led initiative at SOAS University of London dedicated to debating and understanding global struggles against systemic caste oppression.

Rohith Vemula reference — The article invokes his critique of reducing a person to an immediate identity to frame caste-based exclusion; it should not be turned into a verbatim universal definition of Dalit student identity

IIT Bombay context — The article reports the death of a second-year BTech student on September 18; a causal finding linking the death to caste harassment was not established in the material reviewed

UK equality law — Caste is not separately listed as a protected characteristic, but aspects of caste discrimination can fall within race/ethnic-origin protection; advocates seek explicit recognition

Janeu example — The article reports attempts to use a sacred thread as an identity probe. This is an example of intrusive profiling, not a reliable caste-identification rule

VALUE ADDITION

REPORTS, BODIES AND INSTRUMENTS

Equality Act 2010 (United Kingdom) — Existing race/ethnic-origin protection may encompass caste; the debate concerns explicit statutory recognition and the effectiveness of remedies

EXAMPLES FOR THE ANSWER

Chandhok v Tirkey illustrates how existing ethnic-origin protections may encompass caste discrimination even where caste is not separately named in legislation. Contrast this with explicit institutional policy inclusion at Brandeis and California State University when discussing the different routes to legal and administrative protection.

The donor-influence argument in the article can frame a question about institutional independence, complaint mechanisms and transparency. Use it as an attributed perspective requiring evidence in each case, rather than an established analogy proving that particular diaspora communities control university policy.

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