

P2. NATIONAL



Scientific Interventions Supporting the Purple Revolution - Lavender cultivation in Jammu & Kashmir demonstrates how scientific innovation, institutional support and value-chain development can shift farmers towards high-value agriculture.

P3. NATIONAL



Two-wheelers constitute two-thirds of Delhi's vehicles, why the EV policy shift matters - Delhi's EV Policy seeks to reduce urban air pollution through large-scale transport electrification, with a particular focus on pure electric vehicles and two-wheelers.

P4. SECURITY



What India's 12 'operationally deployed' nuclear warheads really mean - India's operational deployment of a limited number of nuclear warheads strengthens its second-strike capability without altering its No First Use nuclear doctrine.

P7. ECONOMICS



On the delay in India-U.S. trade deal - The India-U.S. BTA reflects deepening strategic economic cooperation, although negotiations remain influenced by tariff policies, domestic interests and geopolitical considerations.

Editor's Note

What makes for development? As aspirants, it is a question we repeatedly encounter—not only in textbooks, but also through the events unfolding around us. This edition of the Pala Civil Times explores that very idea by examining developments across governance, economy, environment, internal security and science. In the temperate valleys of Jammu & Kashmir, farmers are shifting towards lavender cultivation, illustrating how scientific innovation and institutional support can transform rural livelihoods. India's evolving nuclear posture highlights how strengthening strategic capabilities can reinforce national security while remaining anchored in its No First Use doctrine. Delhi's ambitious electric vehicle policy reflects the growing importance of clean technology in addressing urban air pollution. Our decoded editorials examine how Europe's devastating heatwaves underscore the global costs of climate change, while the rise of transnational drug trafficking reveals the complex challenges it poses to India's internal security and social development. In the economy section, we analyse the evolving India-U.S. Bilateral Trade Agreement, highlighting the opportunities and uncertainties shaping global trade. We also examine the RBI's revised limited liability framework, which seeks to strengthen public confidence in digital banking by protecting citizens against emerging forms of cyber fraud. Ultimately, development is not defined by any single achievement but by the collective ability of a society to improve security, prosperity, sustainability and the quality of life for its people through informed, inclusive and forward-looking governance.

Editorials Decoded

The IndianEXPRESS

Overheated Europe, Underprepared world



The 2026 European heatwave highlights climate change as a global crisis requiring both adaptation measures and accelerated mitigation efforts.

THEHINDU

Caught in the middle



India's drug challenge is driven by its strategic location between major narcotics-producing regions, requiring an integrated response combining border security, law enforcement and rehabilitation.

Scientific Interventions Supporting the Purple Revolution

Lavender cultivation has emerged as an alternative to traditional crops such as maize in the temperate regions of Jammu & Kashmir, particularly in the Bhaderwah Valley of Doda district, which is now known as the Lavender Capital of India. Farmers are increasingly shifting towards lavender because it is a high-value aromatic crop that provides significantly higher income, greater opportunities for value addition, and improved livelihood security compared to conventional farming.

Why Are Farmers Adopting Lavender?

The decision to adopt lavender is influenced by a combination of economic, technological and institutional factors rather than profitability alone.

- Lavender generates higher returns per unit area than many traditional crops.
- Essential oil extraction, hydrosol production and dried flowers create multiple avenues for value addition.
- The crop is well suited to the rainfed temperate agro-climatic conditions of Jammu & Kashmir.
- Scientific cultivation practices reduce production risks and improve productivity.
- Assured technical support and market development increase farmers' confidence in adopting a new crop.



Government Initiative – The Purple Revolution

Lavender cultivation is being promoted under the **CSIR-Aroma Mission**, a flagship initiative of CSIR aimed at expanding aromatic crop cultivation in India's temperate regions. The mission seeks to increase the income of small and marginal farmers, diversify agricultural production, and promote agriculture-based entrepreneurship. The initiative is being monitored by the **Ministry of Science & Technology** and implemented primarily by **CSIR-IIIM** across different districts of Jammu & Kashmir.

Role of Scientific Institutions

The success of lavender cultivation has been driven by continuous scientific intervention by the CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM).

- **Research and Development:** CSIR-IIIM developed the elite RRL-12 lavender variety suitable for India's rainfed temperate regions and standardized scientific agrotechnology practices.
- **Technology Dissemination:** It distributed more than 30 lakh quality lavender saplings to farmers, facilitating large-scale adoption of the crop.
- **Post-Harvest Infrastructure:** The institute established 50 distillation units (45 fixed and 5 mobile) to enable efficient processing and value addition.
- **Capacity Building:** More than 2,500 farmers and entrepreneurs were trained in scientific cultivation, processing, value addition and marketing, ensuring sustainable adoption of lavender cultivation.

Outcomes and Broader Significance

Lavender cultivation has transformed agriculture in several parts of Jammu & Kashmir by creating a complete value chain around aromatic crops. More than 2,500 farmers have adopted lavender cultivation, while women have found greater employment opportunities in harvesting and processing activities. Rural entrepreneurship has expanded through the production of lavender oil, hydrosols and other value-added products, leading to the growth of a new agro-based industry in the region. The initiative has been widely recognised as the Purple Revolution and received the CSIR Award for S&T Innovations for Rural Development (CAIRD-2020).

PYQ Compass

UPSC questions previously asked from the themes discussed on this page.



Q. Explain the factors influencing the decision of the farmers on the selection of high value crops in India. (GS III – 2025)

Two-wheelers constitute two-thirds of Delhi's vehicles, why the EV policy shift matters

The Delhi Electric Vehicle (EV) Policy, 2026 seeks to accelerate the transition towards zero-emission mobility by promoting pure electric vehicles (EVs) over strong hybrid vehicles. The policy targets at least 30% electrification of Delhi's vehicle fleet by 2030, with a phased transition towards mandatory electrification of two-wheelers, three-wheelers and light-duty goods vehicles (N1 category). Recognising charging infrastructure as a major barrier to EV adoption, the policy also envisages the establishment of over 30,000 public charging points across the National Capital Territory.

Why is Electrification Being Prioritised?

- Vehicular emissions account for nearly 23% of Delhi's winter PM2.5 pollution, making transport the city's largest pollution source (CAQM).
- Two-wheelers constitute about 67% of Delhi's vehicle fleet, making their electrification critical for reducing emissions.
- Three-wheelers, commercial cars and N1 category goods vehicles are prioritised due to their high daily utilisation and disproportionately high emissions.
- Older pre-BS-VI vehicles, traffic congestion, higher vehicle mileage and increasing vehicle-kilometres travelled significantly increase transport emissions.
- Vehicle emissions contribute not only to primary pollutants but also release NOx and VOCs, which react in the atmosphere to form secondary particulate matter, accounting for nearly 27% of Delhi's winter PM2.5 pollution (17% during summer).

Evidence Supporting Electrification

- **TERI (2021):** Two-wheelers account for about 31% of transport-related PM2.5 emissions and 51% of carbon monoxide emissions across the NCR.
- **IIT Kanpur:** Two-wheelers contribute roughly one-third of vehicular PM2.5 and PM10 emissions in Delhi.
- **SAFAR (2018):** Transport is the largest pollution source, contributing 41% of PM2.5 and 76% of NOx emissions.
- **CAQM:** Emissions depend not only on vehicle numbers but also on age, mileage, fuel type, emission standards and maintenance.

BRAIN BOOSTERS

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Did You Know?

PM 2.5

• **Why in news?** Delhi recorded its highest PM 2.5 level (since December 2018) of 392.65 µg/m³ on December 14, 2025.

• PM2.5 refers to particles less than 2.5 micrometers in diameter.

• PM 2.5 is composed mainly of carbon particles, inorganic compounds (sulfate, nitrate, and ammonium), and trace metal compounds (iron, aluminium, nickel, copper, zinc, and lead).

• Major sources : Vehicular emission, Industrial combustion plants, conventional power generation and Commercial and residential combustion.

• Impacts : Oxidative stress, irritation of the airways, coughing, difficulty in breathing, and decreased lung function.

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Way Forward

- The policy represents a major step towards improving Delhi's air quality by targeting the transport sector, the city's largest source of urban air pollution.
- Achieving 100% electrification of new two-wheeler registrations will require rapid expansion of charging infrastructure, greater affordability of EVs and stronger consumer adoption, as electric two-wheelers currently account for only 7.5% of annual registrations.
- By prioritising pure EVs and large-scale transport electrification, the policy supports India's transition towards sustainable, low-carbon and zero-emission mobility.
- As a pioneer in urban clean air initiatives, Delhi's EV policy is expected to influence electrification strategies across the National Capital Region (NCR) and other states.

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Q. The adoption of electric vehicles is rapidly growing worldwide. How do electric vehicles contribute to reducing carbon emissions and what are the key benefits they offer compared to traditional combustion engine vehicles? (GS III – 2023)

What India's 12 'operationally deployed' nuclear warheads really mean

The Stockholm International Peace Research Institute (SIPRI) Yearbook 2026 assessed that **12 of India's estimated 190 nuclear warheads are now operationally deployed**, meaning they are mated with delivery systems and maintained with active military forces in a state of operational readiness. While this marks an important milestone in India's nuclear posture, SIPRI does not suggest that India has lowered its nuclear threshold or abandoned its No First Use (NFU) doctrine.

India's Nuclear Doctrine Remains Unchanged

India's nuclear strategy continues to be based on credible minimum deterrence and the **No First Use (NFU) principle**, under which nuclear weapons would be used only in retaliation to a nuclear attack. The doctrine relies on an assured **second-strike capability**, ensuring that enough of India's nuclear forces survive an adversary's first strike to inflict unacceptable retaliatory damage. The operational deployment of a limited number of warheads therefore strengthens, rather than alters, India's existing nuclear doctrine.

What Has Changed in India's Nuclear Posture?

The major change is **operational readiness**. Traditionally, India stored nuclear warheads separately from their delivery systems (**de-mated posture**) to maximise safety and maintain political control. SIPRI's assessment indicates that a small number of warheads are now mated with delivery platforms, particularly aboard **Arihant-class ballistic missile submarines (SSBNs)** and supported by canisterised **Agni-series missiles**, enabling faster response while improving the survivability of India's nuclear deterrent.

Why is this Strategically Significant?

Unlike land-based missile systems, whose locations can potentially be identified and targeted, ballistic missile submarines (SSBNs) operating underwater are extremely difficult to detect and destroy. This survivability provides India with a credible second-strike capability. With the commissioning of INS Aridhaman in April 2026, alongside INS Arihant and INS Arighaat, India now possesses three Arihant-class SSBNs, enabling continuous at-sea deterrence. This allows one submarine to remain on patrol while the others undergo maintenance, training or transit, thereby ensuring uninterrupted operational readiness and strengthening the sea-based leg of India's nuclear triad.



Global Strategic Context

India's evolving nuclear posture must be viewed within a changing international security environment. SIPRI notes that nuclear-armed states are increasingly modernising their arsenals, with China's rapidly expanding nuclear capabilities, weakening arms-control agreements and emerging technologies such as hypersonic weapons, artificial intelligence and advanced missile defence reshaping strategic stability. India's continued modernisation is therefore aimed at maintaining a credible deterrent against both China and Pakistan while adapting to a more uncertain global nuclear order.

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Q. What is/are the consequence/consequences of a country becoming the member of the 'Nuclear Suppliers Groups'? (2018)

1. It will have access to the latest and most efficient nuclear technologies.
2. It automatically becomes a member of "The Treaty on the NonProliferation of Nuclear Weapons (NPT)".

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

Overheated Europe, Underprepared world (Indian Express : 30-06-2026)

Europe is experiencing increasingly severe and frequent heatwaves, reinforcing that climate change has become a global and interconnected crisis rather than a distant environmental concern. During June 2026, temperatures exceeded 40°C across several European countries, affecting over 150 million people, disrupting power generation, damaging infrastructure and overwhelming healthcare systems. France alone reported nearly 1,000 excess deaths, while transport services, schools and emergency healthcare systems faced significant pressure. The European heatwave demonstrates how extreme weather events are imposing severe human, economic and ecological costs even in developed countries.

Climate Change is Amplifying Extreme Weather Events

The current heatwave has been intensified by a persistent high-pressure system that trapped hot air over Europe and drew warm air from the Sahara, but scientific studies show that human-induced climate change has made such events significantly more frequent and severe. A World Weather Attribution study concluded that the 2026 heatwave would have been virtually impossible without anthropogenic climate change and that higher night-time temperatures are now up to 100 times more likely than two decades ago. Rising greenhouse gas emissions have increased the global carbon footprint, while higher climate sensitivity indicates greater warming for a given rise in atmospheric CO₂ concentrations, making long-term mitigation essential alongside adaptation measures.



Adaptation Alone is Insufficient Without Strong Climate Action

European countries are strengthening adaptation measures through heat action plans, cooling centres, urban greening, climate-resilient infrastructure and improved emergency response systems. However, reliance on energy-intensive solutions such as widespread air conditioning may increase electricity demand, raise carbon emissions and further aggravate climate change. A sustainable response therefore requires accelerated greenhouse gas mitigation, fulfilment of climate finance and technology commitments to developing countries, and renewed commitment to the Paris Agreement goal of limiting global warming to well below 2°C, while pursuing efforts to restrict it to 1.5°C above pre-industrial levels. The European heatwave underscores that delayed climate action today will translate into more frequent and severe climate extremes in the future.

STATIC CORE LINKAGE

- **Climate Change:** Long-term changes in temperature and weather patterns caused primarily by human activities that increase greenhouse gases in the atmosphere.
- **Carbon Footprint:** The total greenhouse gas emissions, particularly CO₂, generated directly or indirectly by an individual, organisation or activity.
- **Climate Sensitivity:** The increase in global average temperature resulting from a doubling of atmospheric CO₂ concentration compared to pre-industrial levels.
- **Paris Agreement:** A legally binding international climate treaty adopted in 2015 under the United Nations Framework Convention on Climate Change to strengthen the global response to climate change.
- **Paris Agreement Goal:** To limit global warming to well below 2°C above pre-industrial levels while pursuing efforts to restrict it to 1.5°C.

RELEVANCE

GS I : World Geography; GS III : Environmental Conservation

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Q. The term Intended Nationally Determined Contribution is sometimes seen in the news in the context of: (2016)

- Pledge made by the European countries to rehabilitate refugees from the war affected Middle East.
- Plan of nation outlined by the countries of the world to combat climate changes.
- Capital contributed by the member countries in the establishment of the Asian Infrastructure Investment Bank.
- Plan of action outlined by the countries regarding Sustainable Development Goals.

Caught in the middle (The Hindu : 30-06-2026)

India's geographical location between the Golden Crescent (Afghanistan, Pakistan and Iran) in the west and the Golden Triangle (Myanmar, Thailand and Laos) in the east places it along major global narcotics trafficking routes. While the UNODC estimates that nearly 80% of the world's illicit opium and heroin has traditionally originated from Afghanistan, Myanmar has increasingly emerged as a major source of illicit opium and methamphetamine production due to prolonged internal instability. Drugs enter India through porous land borders and maritime routes along Gujarat, Kerala and Tamil Nadu, while drones, the darknet and cryptocurrencies have further modernised trafficking networks. Drug trafficking has evolved into a transnational organised crime linked with gunrunning, terrorism, insurgency, money laundering, human trafficking and counterfeit currency, thereby posing significant challenges to India's internal security, border management and public health.

India's Response to Drug Trafficking and Substance Abuse

India has adopted a multi-dimensional strategy combining enforcement, regulation and rehabilitation to combat drug abuse. Agencies such as the **Narcotics Control Bureau (NCB)** strengthen intelligence-led operations, monitor emerging trafficking methods and coordinate inter-agency enforcement, while stricter surveillance has been introduced along international borders and maritime routes. Recognising that substance abuse is also a public health challenge, the **Nasha Mukt Bharat Abhiyaan (2020)** promotes awareness, prevention, community participation and rehabilitation by involving educational institutions, local communities and civil society organisations. **Government efforts are increasingly focused on integrating border security, financial investigations, technological surveillance and de-addiction programmes under a 'whole-of-government' and 'whole-of-society' approach.**



Persisting Challenges and the Way Forward

- Weak regulation of pharmaceutical diversion, inadequate de-addiction infrastructure in rural and border regions, social stigma, high relapse rates and limited post-rehabilitation support continue to undermine the effectiveness of treatment programmes.
- Criminalisation of minor drug users often restricts employment opportunities, increasing the likelihood of relapse and perpetuating the drug-crime cycle.
- Supply-side disruptions alone may drive users towards cheaper synthetic alternatives such as methamphetamine unless complemented by effective rehabilitation and reintegration measures.
- A sustainable response requires strengthened border management, greater international cooperation, improved financial and cyber surveillance, stricter regulation of precursor chemicals, and expanded accessible, gender-responsive de-addiction services.

STATIC CORE LINKAGE

- **Opium:** A highly addictive narcotic derived from the poppy plant and the primary source of heroin.
- **Methamphetamine (Meth):** A highly addictive synthetic stimulant widely trafficked and abused worldwide.
- **Nasha Mukt Bharat Abhiyaan (NMBA):** A 2020 nationwide campaign of the Ministry of Social Justice and Empowerment to prevent substance abuse through awareness and rehabilitation.
- **Golden Triangle:** The Myanmar-Thailand-Laos border region, one of the world's major hubs of illicit opium cultivation and drug trafficking.
- **Golden Crescent:** The Afghanistan-Pakistan-Iran region, one of the world's largest centres of illicit opium production and heroin trafficking.

RELEVANCE

GS III : Internal Security

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UPSC questions previously asked from the themes discussed on this page.



Q. India's proximity to the two of the world's biggest illicit opium growing states has enhanced her internal security concerns. Explain the linkages between drug trafficking and other illicit activities such as gunrunning, money laundering and human trafficking. What counter measures should be taken to prevent the same? (GS III – Internal Security – 2018)

On the delay in India-U.S. trade deal

India and the United States announced their intention to negotiate a comprehensive Bilateral Trade Agreement (BTA) in February 2025 to deepen economic ties and expand bilateral trade. As negotiations for a comprehensive agreement proved difficult, both countries agreed in February 2026 on a framework for an interim trade deal, envisaging phased implementation before a full-fledged BTA. The proposed framework aimed to reduce U.S. tariffs on Indian imports to 18%, provide preferential market access in sectors of mutual interest, and strengthen cooperation in areas such as digital trade, supply chain resilience and the reduction of non-tariff barriers.

Factors Responsible for the Delay

- Negotiations have been delayed due to both bilateral disagreements and evolving U.S. trade policies.
- India has remained reluctant to open its agriculture and dairy sectors and has continued Russian oil imports, prompting the U.S. to impose higher tariffs on Indian goods, including an additional levy linked to Russian energy purchases.
- A major setback occurred when the U.S. Supreme Court ruled that the International Emergency Economic Powers Act (IEEPA) did not authorise the President to impose reciprocal tariffs, thereby removing the legal basis for the tariff concessions that formed the foundation of the proposed India-U.S. interim trade framework.
- Subsequent tariff measures introduced under the Trade Act of 1974 also faced legal challenges, adding to policy uncertainty.
- Investigations initiated by the Office of the U.S. Trade Representative (USTR) under Section 301 into excess manufacturing capacity and forced labour compliance have further delayed the finalisation of the agreement.

Way Forward

India remains committed to concluding a mutually beneficial trade agreement while seeking a comparative tariff advantage over competing economies. However, the finalisation of the agreement depends on the outcome of the ongoing Section 301 investigations. Meanwhile, both countries continue negotiations on non-tariff issues such as market access, digital trade, supply chain resilience and strategic cooperation. The ongoing negotiations underscore the growing strategic importance of India-U.S. economic relations while highlighting the influence of geopolitical considerations on bilateral trade agreements.

RELEVANCE GS II : International Relations, Indian Economy



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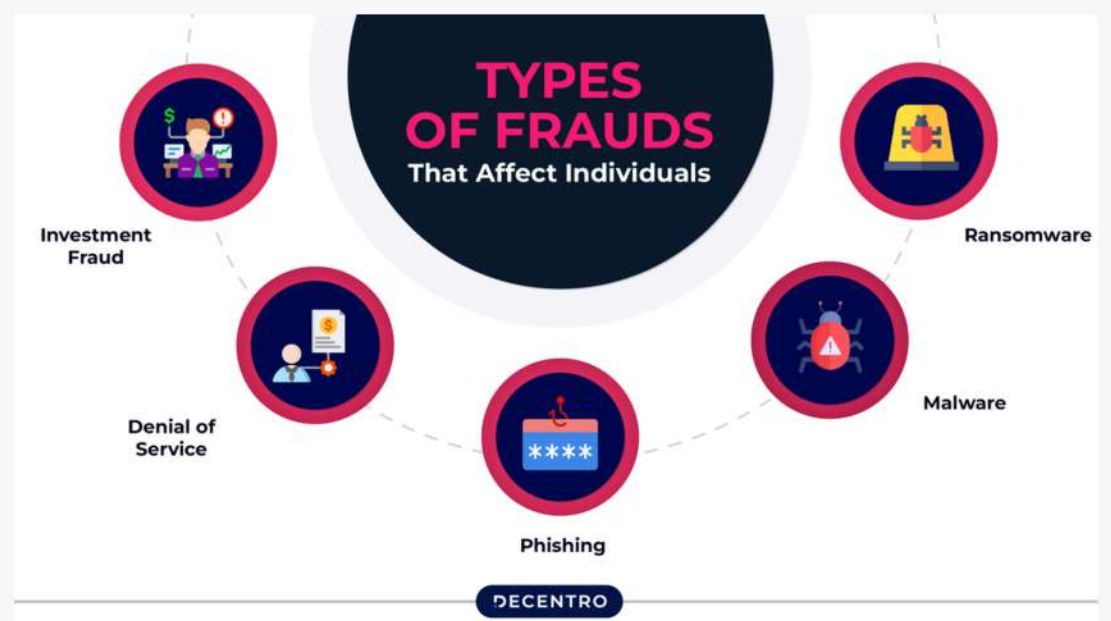
- Q. Economic growth in country X will necessarily have to occur if (2013)
- there is technical progress in the world economy
 - there is population growth in X
 - there is capital formation in X
 - the volume of trade grows in the world economy

Has RBI changed the rules for scam compensation?

The Reserve Bank of India (RBI) has amended its 2017 **Limited Liability Framework** through a pilot framework effective from 1 January 2027 to strengthen customer protection against the growing incidence of digital payment frauds. While the 2017 framework largely compensated customers only in cases of unauthorised electronic banking transactions (such as hacking incidents), the revised framework recognises that most modern cyber frauds occur through social engineering, where customers are deceived or coerced into authorising transactions. The amendments therefore expand customer protection to cover a wider range of fraudulent electronic banking transactions.

Key Features of the Revised Framework

- The framework introduces the concept of **Fraudulent Electronic Banking Transactions (EBTs)**, covering transactions carried out using customer credentials obtained through fraud or authorised by customers under coercion or duress (e.g., digital arrest scams).
- Customers may now receive compensation for scams involving fraudulently obtained OTPs, digital arrest frauds and third-party breaches, in addition to unauthorised electronic transactions.
- Customers who ignore fraud warnings or act negligently, such as failing to update their registered mobile number or email address, will generally not be eligible for compensation.
- The **reporting period** for third-party fraudulent transactions has been extended from three working days to **five calendar days**, and any transaction occurring after fraud is reported must be fully reversed by the bank.
- Individual customers can claim 85% compensation for losses up to ₹50,000, subject to a lifetime cap of ₹25,000, provided the fraud is reported through the National Cybercrime Helpline (1930) within five days.



Significance

- The revised framework marks a shift from protecting customers only against unauthorised transactions to recognising frauds caused by deception, coercion and social engineering, reflecting the evolving nature of cybercrime.
- The framework will operate as a pilot from 1 January to 31 December 2027, enabling banks to strengthen fraud detection and grievance redressal systems while allowing the RBI to assess its effectiveness before wider implementation.
- Concerns remain over the exclusion of losses exceeding ₹50,000, the one-time compensation limit, and the need for stronger safeguards for vulnerable customers against increasingly sophisticated cyber frauds.

STATIC CORE LINKAGE

- **Zero-Click Attack:** A sophisticated cyberattack that compromises a device without requiring any user interaction.
- **One-Time Password (OTP):** A temporary, unique security code used to verify a user's identity during login or electronic transactions.
- **Fraudulent Electronic Banking Transaction (EBT):** An electronic banking transaction carried out using fraudulently obtained customer credentials, customer approval obtained through coercion or duress, or through unauthorised third-party access.

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Q. What are the different elements of cyber security? Keeping in view the challenges in cyber security, examine the extent to which India has successfully developed a comprehensive National Cyber Security Strategy. (GS II - 2022)

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Q. The term Intended Nationally Determined Contribution is sometimes seen in the news in the context of: (2016)

- Pledge made by the European countries to rehabilitate refugees from the war affected Middle East.
- Plan of nation outlined by the countries of the world to combat climate changes.
- Capital contributed by the member countries in the establishment of the Asian Infrastructure Investment Bank.
- Plain of action outlined by the countries regarding Sustainable Developments Goals.

Ans : b

Intended Nationally Determined Contributions (INDCs) refer to the voluntary pledges made by countries under the Paris Agreement to combat climate change. These contributions outline national plans for reducing greenhouse gas emissions and adapting to the impacts of climate change. INDCs became Nationally Determined Contributions (NDCs) once countries ratified the Paris Agreement. Thus, the correct answer is b) Plan of nation outlined by the countries of the world to combat climate changes.

• Small steps

India's third set of nationally-determined contributions (NDCs) makes small upgrades to the last one

	NDC-1	NDC-2	NDC-3	PROGRESS
Year of announcement	2015	2022	2026	
Target year	2030	2030	2035	
Goal 1: Reducing emissions intensity (emissions per unit GDP)	33-35% from 2005 levels	45% from 2005 levels	47% from 2005 levels	36% reduction achieved by 2020
Goal 2: Share of non-fossil electricity sources	40%	50%	60%	52% in February 2026
Goal 3: Creating additional carbon sinks (forests, trees)	2.5 to 3 bn tonnes over 2005 stock	2.5 to 3 bn tonnes over 2005 stock	3.5 to 4 bn tonnes over 2005 stock	2.3 bn tonnes created by 2021

Q. Economic growth in country X will necessarily have to occur if (2013)

- there is technical progress in the world economy
- there is population growth in X
- there is capital formation in X
- the volume of trade grows in the world economy

Ans : C

Economic growth in a country requires an increase in the production capacity of goods and services, which is directly influenced by capital formation.

- Technical Progress in the World Economy – While global technical progress can provide opportunities for growth, it does not guarantee that country X will benefit unless it adopts and utilizes the technology.
- Population Growth in X – Population growth alone does not ensure economic growth. If the growing population is not productively employed, it could even hinder growth.
- Capital Formation in X – Capital formation refers to the increase in physical capital stock (e.g., machinery, infrastructure) within the country. This directly boosts productive capacity and is a critical driver of economic growth.
- Volume of Trade Grows in the World Economy – Increased global trade can create opportunities for country X, but it does not necessarily translate into growth unless the country actively participates and benefits from the trade.

The India–U.S. Bilateral Trade Agreement seeks to expand trade, improve market access and strengthen supply chains, thereby creating favourable conditions for economic growth. However, as reflected in this PYQ, trade agreements alone do not necessarily ensure economic growth unless they are complemented by domestic capital formation, investment and productivity gains.

PYQ Compass

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Q. What is/are the consequence/consequences of a country becoming the member of the 'Nuclear Suppliers Groups'? (2018)

1. It will have access to the latest and most efficient nuclear technologies.
2. It automatically becomes a member of "The Treaty on the NonProliferation of Nuclear Weapons (NPT)".

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

Ans : 1 only

The Nuclear Suppliers Group (NSG), established in 1975, is a 48-member export control regime that regulates the transfer of civilian nuclear materials, equipment, and technology to prevent their diversion for nuclear weapons. Membership enhances access to advanced civilian nuclear technologies through cooperation among participating states, making Statement 1 correct. However, joining the NSG does not automatically make a country a party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Although most NSG members are NPT signatories, NPT membership is not an automatic legal consequence of NSG membership. Answer: (a) 1 only.

Q. In the context, what is the implication of ratifying the 'Additional protocol' with the international Atomic Energy Agency (IAEA)?

- a) The civilian nuclear reactors come under IAEA safeguards.
- b) The military nuclear installations come under the inspection of IAEA.
- c) The country will have the privilege to but uranium from the Nuclear Suppliers Group (NSG).
- d) The country automatically becomes a member of the NSG

Ans : a

The International Atomic Energy Agency (IAEA) was established in 1957 following U.S. President Dwight D. Eisenhower's "Atoms for Peace" initiative to promote the peaceful uses of nuclear energy while preventing its military misuse. Headquartered in Vienna, the IAEA has a dual mandate: promoting safe and peaceful nuclear technology and verifying that nuclear materials are not diverted for weapons. The Additional Protocol strengthens the IAEA's safeguards by granting it expanded access, information, and inspection powers to verify the peaceful use of civilian nuclear facilities. It does not permit inspection of military nuclear installations, confer membership of the Nuclear Suppliers Group (NSG), or guarantee uranium imports. Hence, ratifying the Additional Protocol brings civilian nuclear reactors under enhanced IAEA safeguards, making Statement (a) correct.

Practice Questions and answers

Q. Which of the following factors best explain the success of lavender cultivation in Jammu & Kashmir?

1. Development of an improved crop variety.
2. Value-chain support through distillation units.
3. Skill development and market linkage.
4. Assured Minimum Support Price (MSP).

Choose the correct answer:

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 2, 3 and 4 only
- (d) 1, 2, 3 and 4

Answer: (b) 1, 2 and 3 only

- Development of an improved crop variety – Correct. CSIR-IIIM developed the RRL-12 lavender variety, which is well suited to the rainfed temperate regions of Jammu & Kashmir.
- Value-chain support through distillation units – Correct. CSIR-IIIM established 50 distillation units and provided end-to-end support for processing, value addition and marketing.
- Skill development and market linkage – Correct. More than 2,500 farmers and entrepreneurs were trained in cultivation, processing, value addition and marketing, promoting sustainable livelihoods.
- Assured Minimum Support Price (MSP) – Incorrect. The Purple Revolution was not based on MSP; its success relied on scientific interventions, institutional support and market-driven value addition.

Q. Why are SSBNs central to India's nuclear doctrine?

1. They improve the survivability of nuclear forces.
2. They strengthen second-strike capability.
3. They make continuous at-sea deterrence possible.

Select the correct answer.

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Answer: (d) 1, 2 and 3

- They improve the survivability of nuclear forces – Correct. SSBNs operate underwater and are extremely difficult to detect and destroy, making them the most survivable component of India's nuclear arsenal.
- They strengthen second-strike capability – Correct. Their survivability ensures that India can launch a credible retaliatory nuclear strike even after absorbing an adversary's first strike, which is central to its No First Use (NFU) doctrine.
- They make continuous at-sea deterrence possible – Correct. With three Arihant-class SSBNs—INS Arihant, INS Arighaat and INS Aridhaman—India can maintain one submarine on patrol while the others undergo maintenance or transit, ensuring uninterrupted operational readiness.