



Economic Survey 2024-25: State of the Economy

For Prelims: [Economic Survey 2024-25](#), [Parliament](#), [International Monetary Fund \(IMF\)](#), [Gross domestic product \(GDP\)](#), [Remittances](#), [Current account deficit](#), [Russia-Ukraine war](#), [Israel-Hamas conflict](#), [Suez Canal](#)

For Mains: Economic Survey, India's Economic Growth, Fiscal Policy and Financial Stability, Challenges to Economic Growth, [Climate-resilient agriculture](#)

Source: [PIB](#)

Why in News?

- The Finance Minister Nirmala Sitharaman tabled the [Economic Survey 2024-25](#) in [Parliament](#). It provides a roadmap for reforms and growth, setting the stage for the **Union Budget 2025**.

Economic Survey

- The Economic Survey is an annual report presented by the government before the [Union Budget](#) to assess India's economic condition.
- Prepared by the **Economic Division of the Ministry of Finance** under the [Chief Economic Adviser's](#) supervision, it is tabled in both houses of **Parliament** by the Union Finance Minister.
 - The survey assesses economic performance, highlights sectoral developments, outlines challenges and provides an economic outlook for the coming year.
 - The Economic Survey was first presented in **1950-51 as part of the budget** and became a separate document from the **Union Budget in 1964**, tabled a day before the budget.

What are the Key Highlights of the Economic Survey 2024-25: State of the Economy?

- **Global Economy:** The **global economy** in 2024 experienced **moderate but uneven growth**, with the [International Monetary Fund \(IMF\)](#) projecting **3.2% growth** for the year, with a slowdown in **manufacturing** due to supply chain disruptions while the **services sector** remained strong.
 - Inflation eased globally, yet **services inflation remained persistent**, leading to **divergent monetary policies across central banks**.
- **India's Economy:** India's [Gross domestic product \(GDP\)](#) is projected to grow between **6.3-6.8% in FY26 (2025-26)**.
 - India's **real GDP is estimated to grow by 6.4% in FY25 (2024-25)**, driven by **agriculture and services**, while **manufacturing faces challenges**.
- **Sector-Wise Performance:**
 - **Agriculture: 3.8% growth** in FY25, driven by record [Kharif production](#) and **strong rural demand**.

- **Industry & Manufacturing: 6.2% growth** in FY25, with **manufacturing slowing** due to **weak global demand**.
- **Services: Fastest-growing sector at 7.2%** in FY25, led by **Information technology, finance, and hospitality**.
- **External Sector: Exports grew at 1.6% but imports rose 5.2%**, widening the **trade deficit**.
 - India remained the **top global recipient of remittances**, helping **contain the current account deficit at 1.2% of GDP**.
 - Overall, **India's economic outlook remains positive**, driven by **domestic resilience and structural reforms**, though **risks from global uncertainties persist**.

What are the Challenges Facing India's Economy?

- **Geopolitical Uncertainties: Russia-Ukraine war and Israel-Hamas conflict** have impacted **trade, energy security, and inflation**.
 - **Suez Canal disruptions** forced ships to reroute via the Cape of Good Hope, increasing **freight costs and delivery times**.
 - **Trade policy risks and protectionism** in major economies impact **India's exports and supply chains**.
- **Inflation and Investment: Global inflation easing**, but risks of **synchronized price increases persist**.
 - **Food inflation remains a concern**, driven by **weather shocks and supply chain disruptions**.
 - **Weak global manufacturing demand** has pressured **India's manufacturing sector**, slowing private investment.
- **Financial Risks: State fiscal stress due to rising subsidies**, lower tax collections, and dependency on central transfers.

Way Forward

- **Managing Geopolitical Uncertainties: Diversify trade routes** and partners to reduce dependency on conflict-affected regions.
 - **Strengthen energy security** by increasing **domestic renewable energy** production and securing long-term import agreements.
 - **Enhance trade resilience** through bilateral agreements and participation in global supply chain diversification.
- **Controlling Inflation: Expand food buffer stocks** and strengthen supply chains to stabilize food prices.
 - **Promote climate-resilient agriculture** to mitigate weather-related price shocks.
 - **Encourage private sector investment** through incentives, **tax reforms**, and **ease of doing business** initiatives.
- **Strengthening Financial: Improve tax collection mechanisms** to enhance **state revenues** and reduce dependency on central transfers.
 - **Rationalize subsidies** and implement targeted **welfare schemes** to ensure fiscal discipline.
 - **Encourage states to adopt fiscal responsibility measures** for long-term economic sustainability.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. Increase in absolute and per capita real GNP do not connote a higher level of economic development, if: (2018)

(a) Industrial output fails to keep pace with agricultural output.

(b) Agricultural output fails to keep pace with industrial output.

(c) Poverty and unemployment increase.

(d) Imports grow faster than exports.

Ans: (c)

Q. In a given year in India, official poverty lines are higher in some States than in others because: (2019)

(a) Poverty rates vary from State to State

(b) Price levels vary from State to State

(c) Gross State Product varies from State to State

(d) Quality of public distribution varies from State to State

Ans: (b)

Mains

Q.1 "Industrial growth rate has lagged behind in the overall growth of Gross-Domestic-Product(GDP) in the post-reform period" Give reasons. How far are the recent changes in Industrial Policy capable of increasing the industrial growth rate? **(2017)**

Q.2 Do you agree that the Indian economy has recently experienced a V- shapes recovery? Give reasons in support of your answer. **(2021)**

Need of Sovereign Wealth Fund for India

For Prelims: [Sovereign Wealth Fund](#), [Pension Funds](#), [Norway Government Pension Fund Global](#), [Global Financial Crisis 2008](#), [Planning Commission](#), [NIIIF](#), [Divestment](#), [Forex Reserves](#), [Non-Debt Financial Resources](#), [Current Account Deficit](#), [Fiscal Deficit](#), [ESG \(Environmental, Social, Governance\)](#), [Hydrogen Energy](#), [Semiconductors](#), [Biotechnology](#), [AI](#).

For Mains: Need of sovereign wealth fund for India, Associated concerns and way forward.

Source: [FE](#)

Why in News?

India is contemplating creating a **Bharat [Sovereign Wealth Fund \(BSWF\)](#) or The Bharat Fund (TBF)** to tap a **reservoir of national wealth** that lies dormant in India's economy.

What is a Sovereign Wealth Fund (SWF)?

- **About:** SWFs are **government-owned funds** created from **state surpluses**, often from a

variety of sources like **natural resources, trade surpluses, or budget excesses.**

- SWFs help governments generate wealth through **strategic investments**, ensuring **financial stability and economic growth.**
- **Characteristics: Santiago Principles 2008** defines SWFs as having **3 key characteristics:**
 - It is owned by the **general government**, which includes both **central government** and **sub-national** governments.
 - It Includes **investments in foreign financial assets.**
 - They invest for **financial objectives.**
 - These key elements **exclude public pension funds**, owned by policyholders, and **central bank reserve assets**, which are **not invested.**
- **Types:**
 - **Stabilization Funds: Absorb shocks** from volatile revenues, ensuring fiscal consistency.
 - **Future Generation Funds:** Invest surpluses for **long-term wealth**, benefiting future generations.
 - **Public Benefit Pension Reserve Funds:** Fund pension systems to meet long-term obligations.
 - **Reserve Investment Funds:** Manage and grow **foreign exchange reserves**, stabilizing currency.
 - **Strategic Development SWFs:** Invest in **key sectors** for national development.
 - **Foreign Currency Reserve Assets:** Maintain **currency stability** and manage global trade power.
- **Examples: [Norway Government Pension Fund Global](#)** (USD 1.7 trillion, world's largest SWF), **[China Investment Corporation](#)** (USD 1.35 trillion), **[Abu Dhabi Investment Authority](#)** (USD 993 billion) etc.
- **SWFs in India:**
 - **2007-08:** The SWF idea in India **gained traction in 2007-08** due to a surge in capital inflows (exceeding **USD 108 billion in a year**) but lost momentum after the **[Global Financial Crisis 2008](#)**.
 - **2010-11:** The **[Planning Commission](#)** revived the SWF proposal in **2010-11**, suggesting a **USD 10 billion fund** funded by foreign exchange reserves, PSUs, or budget allocations.
 - **2015:** **[NIIF](#)** was set up that remains **India's main structured investment fund.**

Note: The **Santiago Principles** refer to a set of **24 voluntary guidelines** that promote transparency, good governance, accountability, and prudent investment practices for **Sovereign Wealth Funds (SWFs).**

- These principles were established in **2008** by the **International Forum of Sovereign Wealth Funds (IFSWF)**, a voluntary organisation of **global SWFs.**

Why does India Need a SWF?

- **Unlocking Public Sector Wealth:** A SWF could unlock an estimated **Rs 40 lakh crore (USD 450-500 billion)** across **80 listed enterprises** by investing and increasing returns from these state-owned entities.
- **Fiscal Deficit Reduction:** A **2% divestment** from government equity could generate over **USD 10 billion annually**, reducing India's **fiscal deficit from 4.9% to 4.6% of GDP.**
- **Diversifying Investments:** The **2007-09** crisis highlighted the risks of relying on '**secure**' securities like **US treasuries.**
 - India's SWF could **diversify investments** and seek higher returns.
- **Capitalizing on Excess Reserves:** India's excess **forex reserves**, covering over nine months of imports, could be better utilized to boost **national wealth.**
- **Support for Strategic Sectors:** It can drive **long-term growth and innovation** by investing in sectors like **[electric vehicles](#), [hydrogen energy](#), [semiconductors](#), [biotechnology](#), and [AI](#)**, positioning India as a global leader.
- **Social Welfare:** SWFs can generate **non-debt financial resources** for social sector commitments, enhancing fiscal flexibility for **welfare programs** and national growth

investments.

- **Projecting Soft Power:** SWFs could support **advocacy, incubate ventures, provide disaster relief, and invest in SWFs of other nations like Norway** boosting India's international standing and soft power.

What Concerns are Associated with SWFs?

- **Current Account Deficit:** SWFs are typically for countries with **mineral wealth or trade and budget surpluses** but India faces **persistent current account deficits** and a significant **fiscal deficit**.
- **Macroeconomic Risks:** **Global growth slowdown**, rising sovereign debt, and tightening financial conditions could impact SWFs by **lowering investment returns**, straining fiscal health, and increasing financial instability.
- **Geopolitical Tensions:** Geopolitical tensions and the shift away from **globalization** could disrupt SWF **investment strategies**, affecting **cross-border investments**, supply chains, and trade policies.
- **Environmental Risks:** SWFs risk losses from **climate-exposed industries and stranded assets** if environmental policies fail, particularly in **fossil fuels**.
- **Technological Vulnerabilities:** SWFs managing large sums of public money face **growing risks of fraud and data theft**.
 - Rapid advancements in technology could disrupt traditional investment models.

Way Forward

- **Clear Governance Framework:** Establish a clear **legal and regulatory framework** to ensure **transparency, accountability, and compliance** with the **Santiago Principles** for best practices in SWF governance.
- **Strategic Asset Allocation:** Invest in high-growth sectors such as **AI, biotechnology, EVs, and semiconductors** to enhance India's global standing.
 - Consider **co-investment models** with global funds to **leverage expertise**.
- **Fiscal Prudence:** Implement **phased allocation** of resources, ensuring a balance between **fiscal deficit management and investment goals**.
- **Risk Management:** Develop strategies to **mitigate macroeconomic risks**, including market volatility and financial crises.
 - Adopt **ESG (Environmental, Social, Governance)** principles to **avoid stranded assets** in climate-sensitive sectors.

Drishti Mains Question:

What are Sovereign Wealth Funds (SWFs)? Discuss its potential benefits and associated concerns in India?

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q. With reference to 'National Investment and Infrastructure Fund', which of the following statements is/are correct? (2017)

1. It is an organ of NITI Aayog.
2. It has a corpus of `4,00,000 crore at present.

Select the correct answer using the code given below:

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Ans: (d)

Mains

Q. "Investment in infrastructure is essential for more rapid and inclusive economic growth." Discuss in the light of India's experience. (2021).

Q. Explain the meaning of investment in an economy in terms of capital formation. Discuss The factors to be considered while designing a concession agreement between a public entity and private entity. (2020)

Contract Farming in India's Agriculture

For Prelims: [Contract Farming](#), [Organic Fertilizers](#), [Maximum Residue Level \(MRL\)](#), [Soil Degradation](#), [Monocropping](#), [Food Security](#), [Farmer Producer Organizations \(FPOs\)](#), [Farmers' Empowerment and Protection Agreement on Price Assurance and Farm Services Act, 2020](#), [Andes Region](#), [Protection of Plant Varieties and Farmers' Rights Act, 2001](#), [High Court](#).

For Mains: Advantages and concerns related to contract farming.

Source: IE

Why in News?

[Contract farming](#) has had a **positive impact** in India, particularly for processed potatoes, and this success can be **extended to other crops** and food products.

What is a Contract Farming Model?

- **About: Contract farming** is a system where **farmers (producers)** and **buyers** enter into an agreement regarding the **production and marketing** of farm products.
 - The agreement specifies the **price, quantity, quality standards, and delivery date** for the farmer's produce **before the production process begins**.
- **Advantages:**
 - **Efficient Supply Chain Management:** It **reduces wastage of perishables** ensuring **fair pricing** for producers and consumers.
 - **Access to Credit and Inputs:** Farmers benefit from **credit, inputs, and extension services** provided by contracting firms for **improved quality and production**.
 - **Enhanced Operational Efficiency:** It helps firms **reduce costs, boost efficiency, and meet demand** for high-value, non-traditional crops.
 - **Increased Income for Farmers:** Contract farmers often **earn higher incomes** than non-contract farmers due to **improved yields, guaranteed prices, and efficient practices**.
 - An **RBI paper** revealed that [farmers receive only 31%-43%](#) of the consumer

price for fruits and vegetables that can **increase under contract farming**.

- **Meeting Food Safety Standards:** Firms often train farmers in **food safety practices**, such as using **organic fertilizers** and pesticide control, to meet international standards like the **Maximum Residue Level (MRL)**.
- **Better Price for Consumers:** It **cuts intermediaries**, offering **better prices** for consumers and **competitive rates** for products without middlemen markups.
- **Concerns:**
 - **Power Imbalance:** Small farmers often **lack bargaining power** with large agribusinesses that may lead to **exploitative terms**, especially when **dependent on contracts and investments** in specific crops or assets.
 - **Risk of Default:** **Farmers** may default if market **prices rise**, while **firms** may refuse procurement after a **price crash**, leaving farmers without a market.
 - **Loss of Control Over Land:** Firms often supply all inputs, leaving farmers with **only land and labor to offer**. It can create situations of **forced cultivation** and **indirect land grabs by firms**.
 - **Environmental Degradation:** **Intensive contract farming** can harm the environment through excessive water use, **monocropping**-related infestations, and increased pesticide and fertilizer application.
 - **Food Insecurity:** Farmers might prioritize **high-value cash crops** for contract farming at the cost of growing **food crops**, affecting **local food security**.
- **Policy Status:**
 - **Model APMR (Agricultural Produce Marketing Regulation) Act, 2003:** It introduced **compulsory registration** for contracting firms, **dispute resolution**, **market fee exemptions**, and protected farmers' land ownership under contracts.
 - **Model Agriculture Produce and Livestock Contract Farming Act, 2018:** Key provisions included **state-level authorities for contract farming implementation**, promotion of **FPOs**, **insurance for contracted produce**.

What are Key Points on Potato Production in India?

- **About Potato:** A potato is a **starchy root vegetable** rich in carbohydrates. It originated in the **Peruvian-Bolivian Andes region** of South America.
 - Potatoes need **friable, porous, well-drained soil**.
- **Potato Production:** India is the **2nd-largest** potato producer globally after **China**.
 - **Top Producer: Uttar Pradesh, West Bengal, and Bihar.**
 - The **Kufri varieties of potato** were developed by the **Central Potato Research Institute (CPRI), Shimla**.
- **Legal Dispute (PepsiCo vs. Indian Farmers Case):** In **2016**, PepsiCo **filed lawsuits** against farmers in Gujarat, accusing them of **unauthorized cultivation** of **FL 2027** (potato variety) and demanded compensation.
 - In 2024, the **Delhi High Court** reinstated PepsiCo's FL 2027 registration under the **Protection of Plant Varieties and Farmers' Rights Act, 2001** reviving the dispute.

Way Forward

- **Enhancing Farmers' Bargaining Power:** The government should promote collective action through **FPOs** and cooperatives to help **small landholders** negotiate **better terms and reduce exploitation**.
- **Land Reform Programs:** Land reform programs like **land consolidation** should be strengthened to **ease access to land leasing and contracts**, addressing ownership issues and enabling smallholders to participate more effectively in contract farming.
- **Product-Specific Strategies:** Policymakers should create **tailored contract farming** strategies for **different crops, regions, and market needs** to maximize benefits, especially in high-value sectors.
- **Protection of Farmers' Interests:** A legal framework should protect farmers from exploitation by ensuring **clear, fair, and legally binding agreements**, with strong **dispute resolution mechanisms**.
- **Partnerships with Firms:** The government should **partner with agribusinesses** to align

interests with farmers' welfare, promote **fair practices**, and **focus on technology transfer**, **farmer training** to boost productivity and reduce risks.

Drishti Mains Question:

Q. Examine the advantages and concerns associated with contract farming in India. How can policy reforms address these concerns?

UPSC Civil Services Examination, Previous Year Question (PYQ)

Mains

Q. In view of the declining average size of land in India which has made agriculture non-viable for a majority of farmers, should contract farming and land leasing be promoted in agriculture? Critically evaluate the pros and cons. **(2015)**

Q. How did land reforms in some parts of the country help to improve the socio-economic conditions of marginal and small farmers? **(2021)**

National Critical Mineral Mission

For Prelims: [Critical minerals](#), [Offshore areas](#), [Public Sector Undertakings](#), [Electric vehicle](#), [Magnetic Resonance Imaging](#), [European Union](#), [Semiconductors](#), [Geological Survey of India](#), [KABIL](#)

For Mains: National Critical Mineral Mission, Critical Minerals in Clean Energy Transition, India's Self-reliance in Critical Minerals

Source: [TH](#)

Why in News?

The Union Cabinet approved the **National Critical Mineral Mission (NCMM)** with a **total outlay of Rs 34,300 crore over seven years**.

- The mission aims to **strengthen India's self-reliance in [critical minerals](#)**, in alignment with the [Atmanirbhar Bharat](#) vision.

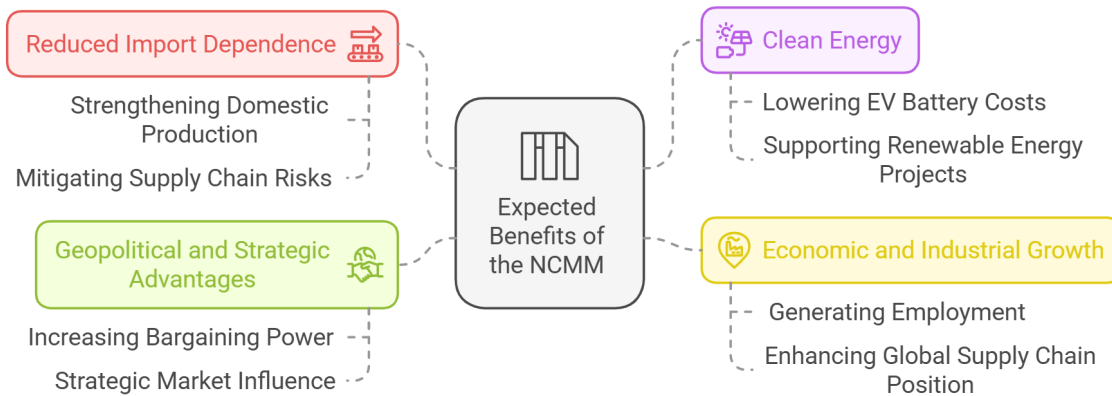
What is the National Critical Mineral Mission (NCMM)?

- **Objective:** The NCMM aims to reduce India's dependence on imports of critical minerals and ensure **self-reliance for high-tech industries**, clean energy, and **national defense**.
 - The mission will cover **all stages**, including mineral exploration, mining, beneficiation, processing, and recovery from end-of-life products.

- The mission will intensify the **exploration of critical minerals within the country and in its offshore areas.**
- **Approach:** The NCMM will adopt a "**whole-of-government**" approach, working closely with various ministries, **Public Sector Undertakings (PSUs)**, private companies, and research institutions.
 - A fast-track approval process will be established to expedite mining projects for critical minerals.
- **Stockpiling Minerals:** NCMM provisions to **develop stockpiles of critical minerals** will ensure that India has sufficient reserves to meet future demands.
- **International Strategy:** Encourages Indian companies to acquire critical mineral **assets abroad** and build trade ties with resource-rich nations.
- **Infrastructure:** The mission will establish **mineral processing parks**, promote recycling of critical minerals, and support research in related technologies, including the creation of a **Centre of Excellence for Critical Minerals.**
 - Encourages industries to **establish processing units within India** through financial incentives.
 - Expands **Promoting Innovations in Individuals, Startups And MSMEs (PRISM) initiative** to fund **startups and Micro, Small and Medium Enterprises (MSME)** in the critical minerals sector.

What is the Need for NCMM?

- **Role of Critical Minerals:**
 - **Green Energy Transition:** Critical Minerals are essential for **solar panels, wind turbines, electric vehicle (EV) batteries, and hydrogen fuel cells.**
 - **Electronics & Telecommunications:** Used in **semiconductors, fiber optics, and circuit boards.**
 - **Defense & Aerospace:** Required in **missile guidance systems, aircraft, and satellite technologies.**
 - **Medical Equipment:** Key component in **Magnetic Resonance Imaging (MRI) machines, pacemakers, and other advanced healthcare technologies.**
- **India's Dependence on Imports:** India heavily depends on China for six critical minerals (bismuth, lithium, silicon, titanium, tellurium, and graphite) highlighting its vulnerability to supply disruptions.
 - The **30% annual growth in lithium-ion battery demand**, driven by EV adoption, makes NCMM essential to support this surge.
- **Global Context:** China dominates the global supply chain for critical minerals like lithium, cobalt, and rare earths, refining over **60% of these minerals.**
 - The US, **European Union**, and Japan have implemented policies to secure their own supplies.
 - India needs a strong strategy for long-term access to critical minerals, making NCMM crucial for global competitiveness.



What are the Recent Developments Related to Critical Minerals?

- **Critical Mineral List:** India has released a [list of 30 critical minerals for India](#).
 - These minerals are Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE, Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.
- **Legislative Amendments:** The [Mines and Minerals \(Development and Regulation\) Act, 1957](#), was amended in 2023 to streamline critical mineral exploration, resulting in the auction of 24 strategic mineral blocks.
 - The 2023 amendment to the [Offshore Areas Mineral \(Development and Regulation\) Act \(OAMDR\), 2002](#), introduces a transparent auction process for offshore mineral rights, mandates composite licenses for exploration and production.
- **Exploration Projects:** The [Geological Survey of India \(GSI\)](#) has completed 368 critical mineral exploration projects, with 195 ongoing in 2024-25, and 227 planned for 2025-26.
- **Customs Duty Elimination:** The FY25 Union Budget removed customs duties on critical minerals to promote domestic production and encourage processing facilities.
- **International Collaboration:** [Khanij Bidesh India Ltd \(KABIL\)](#), a joint venture of the Ministry of Mines, acquired 15,703 hectares in **Catamarca, Argentina**, for lithium exploration and mining.

Drishti Mains Question:

Q. Discuss the significance of the National Critical Mineral Mission to address India's challenges in securing these essential resources?

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims:

Q1. Consider the following minerals: (2020)

1. Bentonite
2. Chromite
3. Kyanite
4. Sillimanite

Q. In India, which of the above is/are officially designated as major minerals?

- (A) 1 and 2 only
- (B) 4 only
- (C) 1 and 3 only
- (D) 2, 3 and 4 only

Ans: D

Q2. Recently, there has been a concern over the short supply of a group of elements called 'rare earth metals'. Why? (2012)

1. China, which is the largest producer of these elements, has imposed some restrictions on their export.
2. Other than China, Australia, Canada and Chile, these elements are not found in any country.
3. Rare earth metals are essential for the manufacture of various kinds of electronic items and there is a growing demand for these elements.

Which of the statements given above is/are correct?

- (A) 1 only
- (B) 2 and 3 only
- (C) 1 and 3 only
- (D) 1, 2 and 3

Ans: C

Mains:

Q. Discuss the multi-dimensional implications of uneven distribution of mineral oil in the world. **(2021)**

Reorganising Denotified Tribes as SC, ST and OBC

For Prelims: Criterion for [SC/ST/OBC](#) Status, [Constitution \(Scheduled Castes\) Order of 1950](#), [Registrar General of India](#), [Denotified Tribes \(DNTs\)](#), [Nomadic Tribes \(NTs\)](#), [Semi-Nomadic Tribes \(SNTs\)](#), Development and Welfare Board for Denotified, Nomadic and Semi-Nomadic Communities (DWBDNC).

For Mains: Issues Related to SCs & STs, Government Policies & Interventions, State of De-notified, Nomadic and Semi-nomadic Tribes in India.

Source: [TH](#)

Why in News?

An ethnographic study by the [Anthropological Survey of India \(AnSI\)](#) and **Tribal Research Institutes (TRIs)** recommended the inclusion of **179 Denotified Tribes (DNTs), Nomadic Tribes (NTs), and Semi-Nomadic Tribes (SNTs)** in the **SC, ST, and OBC** lists of various states and union territories.

- The August 2022 study is under [NITI Aayog](#) panel review and awaits final approval.

Tribal Research Institutes (TRIs)

- **About:** TRIs are research bodies under the **Ministry of Tribal Affairs**, operating at the **state level**. There are **28 TRIs** across India.
- **Primary Focus:**
 - **Knowledge and Research:** Act as a **think tank** for tribal development.
 - **Cultural Heritage:** Preserve and promote **tribal culture** and traditions.
 - **Evidence-Based Planning:** Provide data and insights to **state governments** for **tribal development policies** and **legislations**.
 - **Capacity Building:** Enhance the skills and capabilities of **tribals** and **institutions** working with tribal communities.

Anthropological Survey of India (AnSI)

- AnSI is a government-funded research organization **established in 1945** that **studies the cultural, biological, and linguistic diversity of India**.
- **Functions:** Collects, preserves, and publishes research data; conducts field surveys; and collaborates with international research bodies.
- **Headquarters:** Located in Kolkata, West Bengal.

What are the Key Highlights of the Study on Denotified, Nomadic, and Semi-Nomadic Tribes?

- **New Additions:** Of the 179 recommended communities, **46 are proposed for OBC**, 29 for **SC**, and 10 for **ST** status.
 - Uttar Pradesh, Andhra Pradesh, Tamil Nadu, Madhya Pradesh, and Rajasthan are most impacted, with **Uttar Pradesh having the highest** number of proposed changes.
- **Issues of Non-Traceability:** **63 communities were "not traceable,"** suggesting they have **assimilated, changed names, or migrated**.
 - This challenges the categorization process and raises concerns about identifying communities that have undergone significant social integration.
- **Categorization of Existing Communities:** The study also suggests correcting the **categorization of 9 existing communities** that were either misclassified or inadequately listed in state or central lists.

What are the Procedure for Altering the SC/ST/OBC List in India?

- **Inclusion Criteria:**
 - **Scheduled Castes (SC):** Extreme social, educational, and economic backwardness, often linked to the historical practice of **untouchability**.
 - **Scheduled Tribes (ST):** Indications of **primitive traits, distinct cultural practices**, geographical isolation, and a general state of backwardness.
 - **Other Backward Classes (OBC):** Social, educational, and economic backwardness, as well as **inadequate representation in government services**.
- **Procedure:**
 - **Initiation and Scrutiny:** The proposal is first **initiated by State Governments/UTs** for the **inclusion or exclusion** of a community in the **SC/ST/OBC list** which is then **supported by the Registrar General of India (RGI)** and the **NCSC** or **NCST**.

- Inclusion in the Central OBC list requires recommendations from the [National Commission for Backward Classes \(NCBC\)](#) as per **Section 9 of the NCBC Act, 1993**.
- **Procedure for inclusion** in the **SC/ST category** is governed by [Article 341 \(for SC\)](#) and [Article 342 \(for ST\)](#) of the Constitution.
- The proposal is scrutinized by the **Ministry of Social Justice and Empowerment**, which evaluates it based on socio-economic factors and historical data, with inputs from the **RGI**.
- Amendments to lists are subject to proposal reviews and approval by the Union Cabinet.
- **Parliamentary Process:** A **Constitutional Amendment Bill** is introduced in Parliament to formalize the proposed changes to the SC/ST/OBC list.
 - The Bill requires a [special majority](#), i.e., a two-thirds majority of members present and voting, along with the **support of more than 50% of the total strength of the House**.
- **Presidential Assent and Implementation:** After being **passed by both Houses of Parliament**, the Bill is sent to the **President** for assent. Once the **President grants assent**, the amendments to the **SC/ST/OBC list are officially enacted**.

Registrar General of India (RGI):

- Established in **1961** under the **Ministry of Home Affairs**, the RGI **oversees the demographic surveys** of India, including the [Census](#) and the **Linguistic Survey of India**.

Who are DNTs, NTs, and SNTs?

Click to Read: [Denotified Tribes \(DNTs\), Nomadic Tribes \(NTs\), and Semi-Nomadic Tribes \(SNTs\)](#)

What are the Constitutional Provisions Related to SC, ST, and OBC in India?

- **Fundamental Rights:**
 - **Articles 17 and 23** prohibit [untouchability](#) and **human trafficking**, ensuring protection for SCs.
 - **Article 15(4)** permits special provisions for the advancement in **educational institutions**.
 - **Article 16(4)** provides for **reservation** in public employment.
 - **Political Representation:** [Article 330, Article 332](#)
- **Article 340, Article 341 & Article 342:**
 - **Article 340:** Authorizes the **President to appoint a commission** for investigating **backward classes** and recommending welfare measures.
 - **Article 341:** Empowers the President to **specify SCs for any state** or union territory.
 - **Article 342:** Empowers the President to **specify STs for any state** or union territory.
- **Article 46:** **Article 46** directs the State to **promote the educational and economic interests** of **SCs, STs, and other weaker sections** of society.
- **Article 338 and 338A:** Establish the **NCSC** and **NCST** to safeguard the interests of SC/STs.
- **National Commission for Backward Classes (NCBC):** Established through the [102nd Constitutional Amendment Act \(2018\)](#) under **Article 338B**.
- **Special Administration for STs:** [Fifth Schedule](#) and [Sixth Schedule](#).

[Drishti Mains Question:](#)

What are the constitutional safeguards and schemes available for the socio-economic upliftment of Scheduled Castes, Scheduled Tribes and Other Backward Classes in India?

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims:

Q1. If a particular area is brought under the Fifth Schedule of the Constitution of India, which one of the following statements best reflects the consequence of it? (2022)

- (a) This would prevent the transfer of land of tribal people to non-tribal people.
- (b) This would create a local self-governing body in that area.
- (c) This would convert that area into a Union Territory.
- (d) The State having such areas would be declared a Special Category State.

Ans: (a)

Q2. Under which Schedule of the Constitution of India can the transfer of tribal land to private parties for mining be declared null and void? (2019)

- (a) Third Schedule
- (b) Fifth Schedule
- (c) Ninth Schedule
- (d) Twelfth Schedule

Ans: (b)

Mains:

Q. Whether the National Commission for Scheduled Castes (NCSC) can enforce the implementation of constitutional reservation for the Scheduled Castes in the religious minority institutions? Examine. **(2018)**

Q. In 2001, RGI stated that Dalits who converted to Islam or Christianity are not a single ethnic group as they belong to different caste groups. Therefore, they cannot be included in the list of Scheduled Castes (SC) as per Clause (2) of Article 341, which requires a single ethnic group for inclusion. **(2014)**

Nicobarese Tribe

[Source: TH](#)

Why in News?

A study published in the *European Journal of Human Genetics* has revised the timeline of **Nicobarese migration to the [Nicobar Islands](#)**.

What are the Key Findings of the Study on Nicobarese Tribe?

- **Revised Migration Timeline:** Previous studies estimated that the Austroasiatic ancestors of the Nicobarese arrived to Nicobar Islands over **11,000 years ago**.
 - The new study, using advanced [Deoxyribonucleic acid \(DNA\)](#) analysis, corrected this estimate to **approximately 5,000 years ago**.
- **Genetic Link:** The study found that the Nicobarese share ancestral ties with the **Htin Mal community**(ethnic group native to **Laos-Thailand region**).
 - This supports the idea that their ancestors migrated from **Southeast Asia**, rather than South Asia.

- **Preservation of Genetic Identity:** Due to their **geographical isolation**, the Nicobarese have maintained their **genetic identity** with minimal external influence.
 - This has allowed researchers to trace their ancestry more precisely.
- **Linguistic Continuity:** Despite their genetic ties to Southeast Asia, the Nicobarese have retained their **Austroasiatic language roots** (Khmuic branch), linking them to other Southeast Asian populations.

WHAT CCMB-BHU STUDY UNVEILS

- Researchers made genetic analysis using DNA markers from mothers & fathers

- Study indicates Nicobarese share significant ancestral link with Austroasiatic people



- Findings suggest Nicobar islanders settled about 5k years ago, not 11,700 years ago

- Study highlights genetic affinity between Htin Mal community in Southeast Asia & Nicobarese people

What are the Key Facts About the Nicobarese Tribe?

- **Geography:** The Nicobarese live on the Nicobar Islands in the **Bay of Bengal**, part of India's **Andaman and Nicobar Islands** Union Territory.
 - The Nicobar Islands consist of 19 islands, the major islands are **Car Nicobar, Kamorta, Nancowrie, and Great Nicobar**, which have both hilly and flat terrains.
 - **Great Nicobar is the southernmost and largest of the Nicobar Islands.**
- **Ethnic Group:** The Nicobarese belong to the **Mongoloid ethnic group** and have a population of over 27,000.
 - While not divided into tribes, they are classified into **six territorial groups: Car Nicobar, Chowra, Teressa with Bompoka, Central Group, Southern Group, and the Shompen** (inland tribe of Great Nicobar).
- **Social Structure: Patriarchal joint family system** known as **Tuhet**.
 - **With no individual ownership**, the **Tuhet** collectively owns land, coconut trees, and pigs.



UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims:

Which of the following have coral reefs? (2014)

1. Andaman and Nicobar Islands
2. Gulf of Kachchh
3. Gulf of Mannar
4. Sunderbans

Select the correct answer using the code given below:

(a) 1, 2 and 3 only

(b) 2 and 4 only

(c) 1 and 3 only

(d) 1, 2, 3 and 4

Ans: (a)

Q. Which one of the following pairs of islands is separated from each other by the 'Ten Degree Channel'? (2014)

- (a) Andaman and Nicobar
- (b) Nicobar and Sumatra
- (c) Maldives and Lakshadweep
- (d) Sumatra and Java

Ans: (a)

Q. In which one of the following places is the Shompen tribe found? (2009)

- (a) Nilgiri Hills
- (b) Nicobar Islands
- (c) Spiti Valley
- (d) Lakshadweep Islands

Ans: (b)

Impact of Coal Dust on Plants

[Source: TH](#)

Why in News?

A study by the University of Southampton and NIT Rourkela found that **dust from coal mining harms plants and vegetation** by clogging **plant stomata and reducing carbon absorption**, affecting ecosystem health.

- The dust affects vegetation up to **30 km from the mine**, with the highest concentrations found along transportation routes.

How does the Coal Mining Dust Impact the Plants?

- **Reduction in Carbon Uptake:** Plants with mining dust on their leaves absorb **2-3 grams less carbon per square meter** compared to dust-free plants, which could significantly contribute to **higher levels of carbon dioxide in the atmosphere**, exacerbating [global warming](#) over time.
- **Impact on Plant Health:** The accumulation of dust on leaves **obstructs the stomata**, which **affects photosynthesis and water vapor release**.
 - This **reduction in transpiration** can cause **plants to overheat**, leading to **stunted growth, plant death** and damage of local ecosystems.

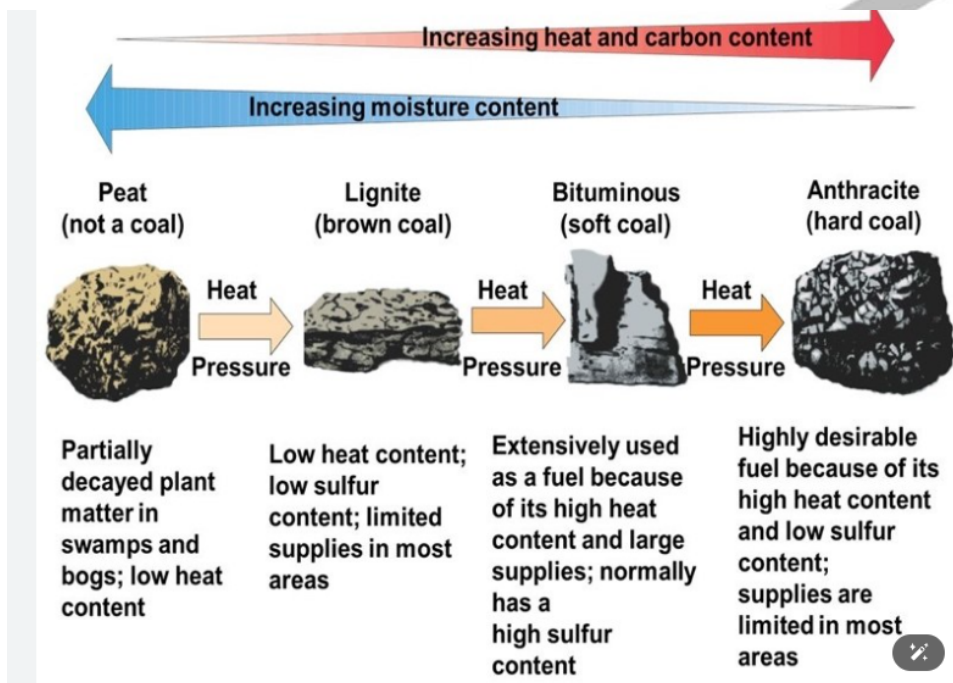
- **Respiratory Risks:** Open-cast mining causes severe [air pollution](#) as dust from blasting, drilling, and transportation disperses, **posing serious respiratory risks.**

Impact of Coal Dust on Humans

- **Respiratory Disorders:** [Pneumoconiosis](#) (Black Lung Disease), leading to **lung scarring** and **breathing difficulties.**
 - It also increases the risk of [COPD \(chronic bronchitis, emphysema\)](#), **lung cancer.**
- **Cardiovascular Diseases:** Coal dust increases the risk of [heart disease, strokes, and arterial blockages](#) by causing inflammation and high blood pressure.
- **Neurological & Health Effects:** Heavy metals in coal dust can cause **neurotoxicity, skin and eye irritation, and reproductive issues**, affecting cognitive function and overall health.

Coal

- **About:**
 - Coal is a **sedimentary rock** that is black or **brownish-black in color.**
 - It is a **fossil fuel** that is made from the **remains of plants that lived millions of years ago.**
- **Types:**



- **Production:**
 - **Coal Producing Countries by Ranking (2022):** China, India, Indonesia, US and Russia.
 - The US has the world's largest proven coal reserves.
 - **In India:** The major coal-producing states are **Odisha, Chhattisgarh and Jharkhand**, along with parts of Madhya Pradesh, and they account for **75%** of domestic raw coal dispatches in India.

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims

Q. In India, the steel production industry requires the import of (2015)

- (a) saltpetre
- (b) rock phosphate
- (c) coking coal
- (d) All of the above

Ans: (c)

Q. Despite having large reserves of coal, why does India import millions of tonnes of coal? (2012)

1. It is the policy of India to save its own coal reserves for the future, and import it from other countries for the present use.
2. Most of the power plants in India are coal-based and they are not able to get sufficient supplies of coal from within the country
3. Steel companies need large quantity of coking coal which has to be imported

Which of the statements given above is/are correct?

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

Ans: (b)

Death Anniversary of Mahatma Gandhi

Source: IE

India observes **Martyrs' Day, or Shaheed Diwas**, every 30th January to commemorate those who sacrificed their lives for the country's independence, with a special focus on **Mahatma Gandhi's assassination ("Mahatma Gandhi Punyatithi")**.

- On 30th January 1948, Gandhi was assassinated by **Nathuram Godse** during an evening prayer at **Birla House** in Delhi.
- **Martyrs' Day Tributes:** People gather at **Raj Ghat** (the memorial site of Mahatma Gandhi in Delhi) for prayer meetings.
- **Note: Martyrs' Day is also commemorated on 23rd March** to remember the sacrifice of three extraordinary revolutionaries of India - **Bhagat Singh, Shivaram Rajguru, Sukhdev Thapar**.

Mohandas Karamchand Gandhi



“The weak can never forgive. Forgiveness is the attribute of the strong.”

Brief Description

Birth: 2nd October 1869, Porbandar (Gujarat).

2nd October is observed as **International Day of Non-Violence**.

Profile: Lawyer, Politician, Social activist, Writer and led Nationalist Movement.

Father of the Nation (first called by Netaji Subhash Chandra Bose).

Ideology: Believed in the ideas of non-violence, Truth, Honesty, Care for Mother Nature, Compassion, Welfare of Downtrodden etc.

Political Mentor: Gopal Krishna Gokhale

Death: Shot dead by Nathuram Godse (30th January, 1948).

30th January is observed as **Martyrs' Day**

Nominated for the Nobel Peace Prize five times.



Gandhi in South Africa (1893-1915)

Used satyagraha against racist regime (Native Africans and Indians were discriminated).

Pravasi Bharatiya Divas (PBD) is celebrated every year on 9th January, to commemorate his return from South Africa.

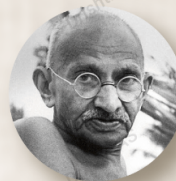
Contribution in India's Freedom Struggle

Small-scale movements like Champaran Satyagraha (1917)—First Civil Disobedience, Ahmedabad Mill Strike (1918)— First Hunger Strike, and Kheda Satyagraha (1918)—First Non-Cooperation.

Nationwide Mass Movements: Against Rowlatt Act (1919), Non-Cooperation Movement (1920-22), Civil Disobedience Movement (1930-34), Quit India Movement (1942).

Gandhi-Irwin Pact (1931): Between Gandhi and Lord Irwin that marked the end of a period of civil disobedience.

Poona Pact (1932): Between Gandhi and **B.R. Ambedkar**; this abandoned the idea of separate electorates for the depressed classes (Communal Award).



Books Written

Hind Swaraj, My Experiments with Truth (Autobiography)

Weeklies

Harijan, Navjivan, Young India, Indian Opinion.

Gandhi Peace Prize

is given by India for social, economic, and political transformation through Gandhian methods.

“Happiness is when what you think, what you say, and what you do are in harmony.”

“You must not lose faith in humanity. Humanity is an ocean; if a few drops of the ocean are dirty, the ocean does not become dirty”

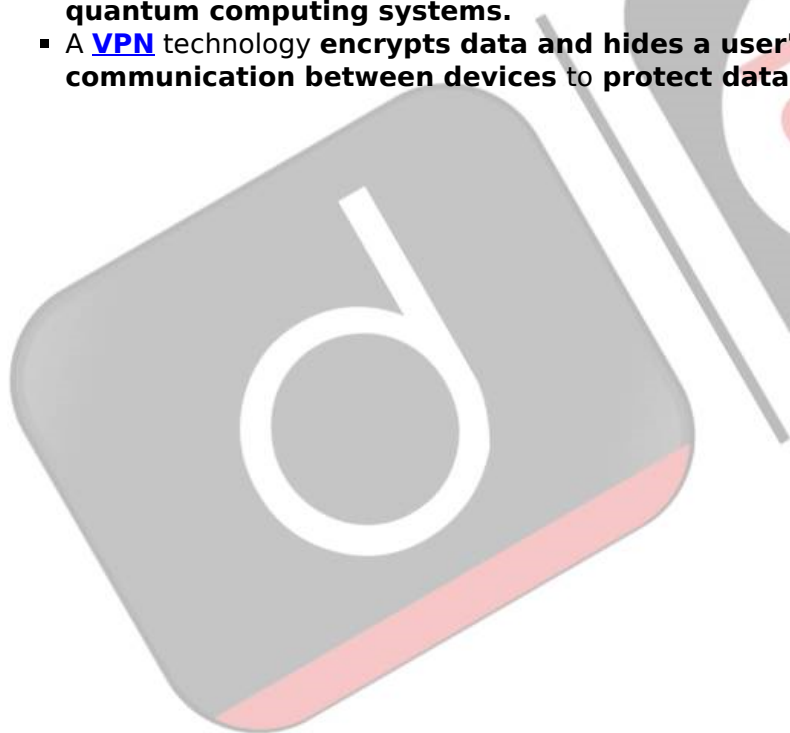
Read more: [Mahatma Gandhi](#)

Post-Quantum Encryption Cryptography

Source: HT

[Virtual Private Network \(VPN\)](#) companies are adapting to the **potential threats** posed by [quantum computing](#) through the implementation of [Post-Quantum Cryptography \(PQC\)](#).

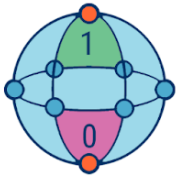
- [Quantum computing](#) poses several **threats to current encryption** methods due to its ability to perform extremely fast calculations.
 - **Breaking Asymmetric Encryption:** Quantum computers can solve complex mathematical problems like **factoring large numbers** and solving discrete logarithms.
 - This could compromise encryption methods like [Rivest-Shamir-Adleman \(RSA\)](#) and [elliptic curve cryptography \(ECC\)](#), which are widely used for secure communication.
 - **Store Now, Decrypt Later (SNDL) Attacks:** Cybercriminals may **store encrypted data instantly and decrypt it later** when quantum computers become powerful enough, endangering sensitive information.
 - **Industry-Wide Data Security Risks:** Sectors like **finance, healthcare, and government communications** face risks of data breaches and financial losses if quantum computers break encryption standards.
- **Post-Quantum Encryption/ Cryptography (PQC):**
- **PQC** refers to **cryptographic methods that do not rely on mathematical problems** easily solvable by [quantum computers](#).
- It is also known as **quantum-resistant, quantum-safe, or quantum-proof cryptography**.
- These methods are designed to **remain secure against attacks** from both **classical and quantum computing systems**.
- A [VPN](#) technology **encrypts data and hides a user's IP address** to ensure **secure communication between devices to protect data privacy and security**.



Quantum Computing

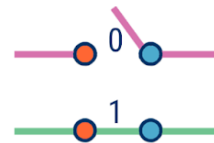
Vs.

Classical Computing



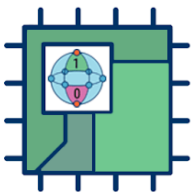
Calculates with qubits, which can represent 0 and 1 at the same time

Calculates with transistors, which can represent either 0 or 1



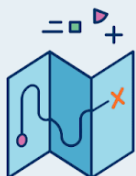
Power increases exponentially in proportion to the number of qubits

Power increases in a 1:1 relationship with the number of transistors



Quantum computers have high error rates and need to be kept ultracold

Classical computers have low error rates and can operate at room temp



Well suited for tasks like optimization problems, data analysis, and simulations

Most everyday processing is best handled by classical computers



CBINSIGHTS

Read More: [Post-Quantum Cryptography](#), [Virtual Private Network](#)

Niger, Mali and Burkina Faso Left ECOWAS

The West African nations of **Niger, Mali, and Burkina Faso** have officially withdrawn from the [Economic Community of West African States \(ECOWAS\)](#).

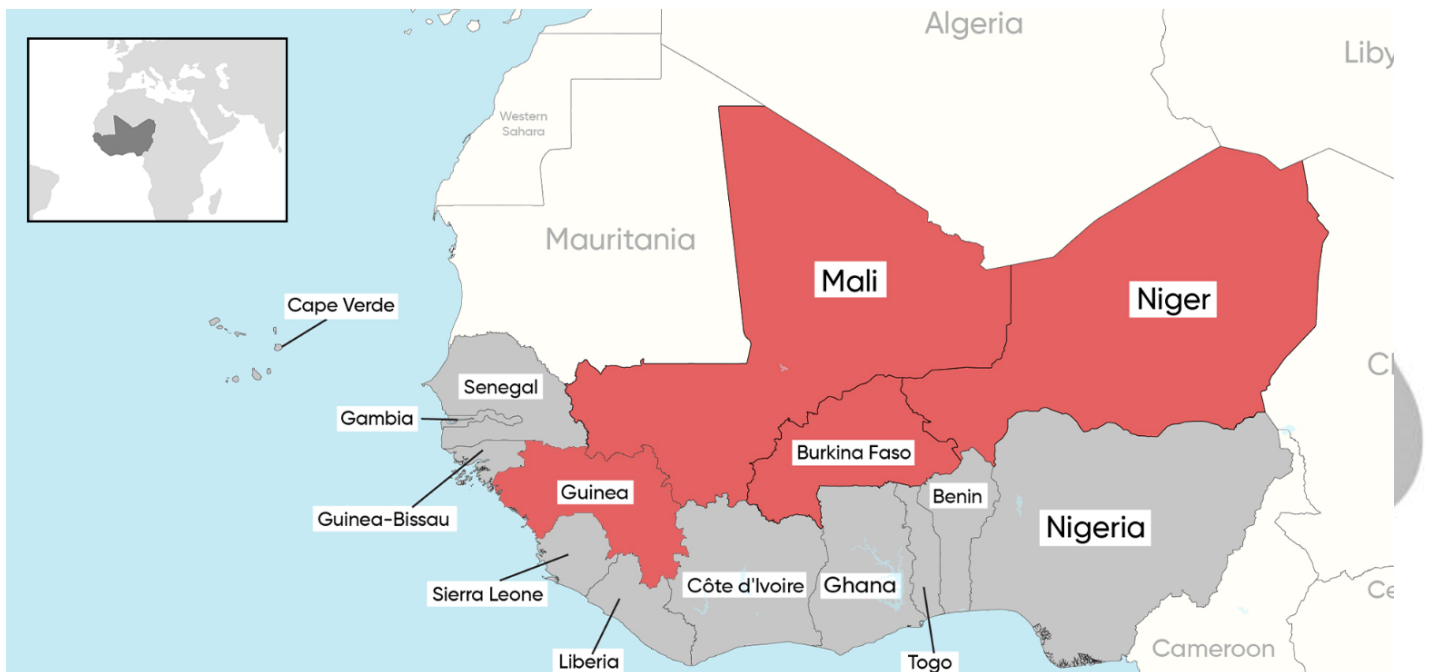
- The three countries formed the **Alliance of Sahel States**, seeking military support

from **Russia** and distancing themselves from the US and France.

- The Sahel is a **semiarid region** (western and north-central Africa), a **transitional zone** between the **Sahara desert** (north) and **humid savannas** (south).

▪ **About ECOWAS:**

- It is a regional group of **15 West African countries** (before withdrawal), founded in **1975** with the signing of the **Treaty of Lagos (Nigeria)**.
- It is headquartered in **Abuja, Nigeria** and aims to promote **economic integration and shared development** of the West African sub-region.
- It established its **free trade area in 1990** and adopted a **common external tariff in 2015**.
- A **peacekeeping force** was sent to **Liberia in 1990** during its **civil war** and to **Sierra Leone in 1997** after the government was overthrown.
- **Mauritania** withdrew in **2000** but **rejoined** as an associate member in **2017**.



Read More: [Economic Community of West African States](#)

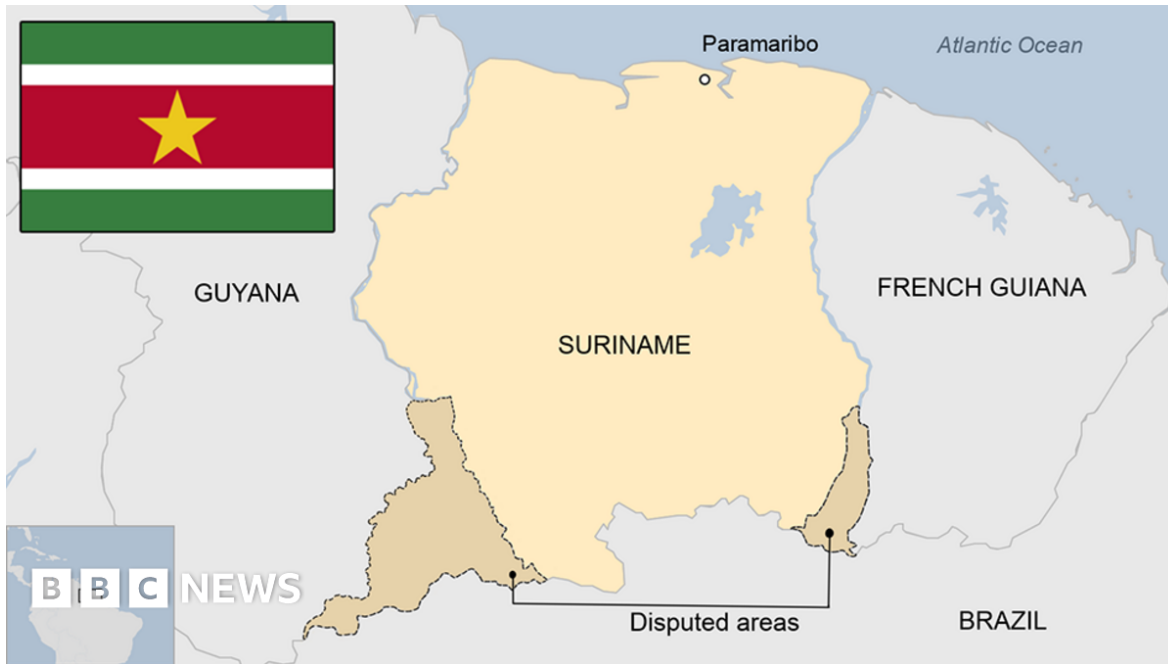
First Defence Export of Ordnance Clothing

[Source: TH](#)

The **Ordnance Clothing Factory (OCF)**, Avadi, under the **Ministry of Defence**, executed India's **first defence export** order to the Republic of **Suriname**.

- OCF is developing a "**Future Soldier System**" that includes **lightweight, digitally printed, antibacterial camouflage uniforms** and **ballistic helmets (0.9 kg)** to enhance soldier mobility.
- OCF Avadi manufactures **bullet-resistant jackets, ballistic helmets, vests, and bomb suppression blankets**.
- **India's defence exports** rose to over **Rs 21,000 crore in 2023-24**, up from **Rs 2,000 crore in 2014** with a **target of Rs 50,000 crore by 2029**.
- **Suriname:** It lies on the **northeastern coast of South America** and borders **Guyana, French Guiana, and Brazil**.

- During the colonial period, **Indians** arrived in Suriname as **indentured labor** to work on **sugar plantations**.



Read More: [2nd India-CARICOM Summit](#)

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