

7 PM COMPILATION

February, 2022

Features of 7 PM compilation

- ❖ Comprehensive coverage of a given current topic
- ❖ Provide you all the information you need to frame a good answer
- ❖ Critical analysis, comparative analysis, legal/constitutional provisions, current issues and challenges and best practices around the world
- ❖ Written in lucid language and point format
- ❖ Wide use of charts, diagrams and info graphics
- ❖ Best-in class coverage, critically acclaimed by aspirants
- ❖ Out of the box thinking for value edition
- ❖ Best cost-benefit ratio according to successful aspirants

Major Highlights of the Economic Survey 2021-22 – Explained, pointwise

Topic:- Economy

Sub topic:- Economic Survey

Union Budget 2022-23: Highlights and Concerns – Explained, pointwise

Topic:- Economy

Sub topic:- Union Budget 2022-23

Digital Rupee: Advantages and Challenges – Explained, pointwise

Topic:- Economy

Sub topic:- Digital Rupee

Biological Diversity Amendment Bill, 2021: Provisions and Concerns – Explained, pointwise

Topic:- Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.

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[Kurukshehra January Summary] Smart Farming: Towards Sustainable Agriculture – Explained, pointwise

Topic:- Agriculture

Sub topic:- Major Crops - Cropping Patterns in various parts of the country

Regulating ART and Surrogacy: Associated Challenges – Explained, pointwise

Topic:- Science and Technology

Sub topic:- Developments and their applications and effects in everyday life.

The Great Power Rivalry (China, Russia and the US) and its Impact on India – Explained, pointwise

Topic:- International Relations

Sub topic:- Effect of policies and politics of developed and developing countries on India's interests

Crop Diversification: Need, Advantages and Challenges – Explained, pointwise

Topic:- Agriculture

Sub topic:- Major Crops - Cropping Patterns in various parts of the country

[Yojana February Summary] Early Childhood Care and Education: Teach them Young – Explained, pointwise

Topic:- Issues relating to development and management of Social Sector/Services relating to Education

Sub topic:- Early Childhood Care and Education

Nuclear Fusion Technology: Evolution, Challenges and Future Potential – Explained, pointwise

Topic:- Science and Technology

Sub topic:- Science and Technology developments and their applications and effects in everyday life.

[Kurukshehra February Summary] Ayushman Bharat: Achieving Universal Health Coverage – Explained, pointwise

Topic:- Issues relating to development and management of Social Sector/Services relating to Health.

Sub topic:- Universal Health Coverage

Drone Imports Ban and Boosting Indigenous Drone Manufacturing – Explained, pointwise

Topic:- Science and Technology

Sub topic:- Indigenization of technology

Geospatial Sector in India – Explained, pointwise

Topic:- Science and Technology

Sub topic:- Developments and their applications and effects in everyday life.

Research and Development in India: Status, Challenges and Recommendations – Explained, pointwise

Topic:- Science and Technology

Sub topic:- Indigenization of technology and developing new technology.

[Kurukshehra February Summary] Rural Healthcare Infrastructure – Explained, pointwise

Topic:- Social Justice

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Culture of Freebies in India: Issues and Recommendations – Explained, pointwise

Topic:- Governance

Sub topic:- Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

India-UAE Bilateral Relationship – Explained, pointwise

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Sub topic:- Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

Corporate Governance in India – Explained, pointwise

Topic:- Governance

Sub topic:- Important aspects of governance, transparency and accountability

[Yojana February Summary] Quality Education for All – Explained, pointwise

Topic:- Social Justice

Sub topic:- Issues relating to development and management of Social Sector/Service relating to Education

Manual Scavenging – Explained, pointwise

Topic:- Social Justice

Sub topic:- Mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.

Plastic Waste Management (Amendment) Rules, 2022 – Explained, pointwise

Topic:- Environment and Bio-diversity

Sub topic:- Conservation, environmental pollution and degradation

[Yojana February Summary] Skilling Youth for Future – Explained, pointwise

Topic:- Social Justice

Sub topic:- Issues relating to development and management of Social Sector/Service relating to Human Resources.

India-Russia Trade Relationship Post Russia-Ukraine Crisis – Explained, pointwise

Topic:- International Relations

Sub topic:- Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

The Russia-Ukraine Conflict – Explained, pointwise

Topic:- International Relations

Sub topic:- Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

Major Highlights of the Economic Survey 2021-22 – Explained, pointwise

Introduction

The Government tabled the Economic Survey 2021-22 in the Parliament on January 31. The survey focuses on the post-pandemic recovery and analyses a range of aspects including inflation, energy prices and global uncertainties.

The survey has also taken stock of growing revenues to indicate the availability of fiscal space for the Government. The Survey has noted that India will witness GDP growth of 8.0-8.5% in FY2022-23, supported by widespread vaccine coverage, gains from supply-side reforms and easing of regulations, robust export growth, and availability of fiscal space to ramp up capital spending. This growth (8.0-8.5%) would make India the fastest-growing major economy in the world.

[\[Download\] Economic Survey 2021-22 pdf](#)

Status mentioned in Economic Survey 2021-22

GDP projections: GDP has climbed past pre-Covid levels with growth registering 9.2% in 2021-22 after a contraction of 7.3% in 2020-21. The Survey says, the GDP projection is comparable with the World Bank's and Asian Development Bank's latest forecasts of real GDP growth of 8.7% and 7.5% respectively for 2022-23.

Note: The growth projection for 2022-23 is based on the assumption that there will be no further debilitating pandemic related economic disruption, monsoon will be normal, withdrawal of global liquidity by major central banks will be broadly orderly, oil prices will be in the range of US\$70-\$75/bbl, and global supply chain disruptions will steadily ease over the course of the year.



Source: PIB

Agriculture and allied sectors: This sector has been the least impacted by the pandemic and the sector is expected to grow by 3.9% in 2021-22 after growing by 3.6% in the previous year.

The area sown under *Kharif* and *Rabi* crops, and the production of wheat and rice, has been steadily increasing over the years. This is due to **1) Minimum support prices, 2) Timely supplies of seed and fertilizers, 3) Good monsoon rains** as reflected in reservoir levels being higher than the 10-year average.

Industrial growth: The industrial sector went through a sharp rebound from a contraction of 7% in 2020-21 to an expansion of 11.8% in this financial year. The share of industry in the GVA is now estimated at 28.2%.

The survey mentioned that measures such as the [PLI scheme for various sectors](#), along with policy initiatives such as the [emergency credit line guarantee](#) to micro, small, and medium enterprises will help aid the pace of recovery.

Services sector: The Survey states that the services sector has been the hardest hit by the pandemic, especially segments that involve human contact. This sector is estimated to grow by 8.2% this financial year, following last year's contraction by 8.4%.

Sectors like Finance, Real Estate and the Public Administration segments are now well above pre-COVID levels. However, sectors like Travel, Trade and hotels are yet to fully recover. There has been a boom in software and IT-enabled services exports even as earnings from tourism have declined sharply.

Total consumption: It is estimated to have grown by 7.0% in 2021-22. Government consumption remains the biggest contributor.

Gross Fixed Capital Formation (GFCF): The investment to GDP ratio is about 29.6% in 2021-22, the highest in seven years. While private investment recovery is still at a nascent stage, there are many signals which indicate that India is poised for stronger investment.

Exports and Imports: Merchandise exports have been above US\$30 billion for eight consecutive months in 2021-22. Net services exports have also risen sharply. India's total exports are expected to grow by 16.5% in 2021-22 surpassing pre-pandemic levels. Imports are expected to grow by 29.4% in 2021-22.

Read more: [Increasing exports in India and challenges in exports- Explained, pointwise](#)

Balance of payments: India's balance of payments remained in surplus throughout the last two years. This allowed the Reserve Bank of India to keep accumulating foreign exchange reserves, which stand at US\$634 billion on 31st December 2021. This is equivalent to 13.2 months of imports and higher than the country's external debt.

Tax collections: The tax collections have been buoyant for both direct and indirect taxes and the gross monthly GST collections have crossed Rs 1 lakh crore consistently since July 2021.

Fiscal deficit: According to the budget estimates, the FD for 2021-22 will be at 6.8%. This figure is a sharp increase from 4.6% in 2019-20.

Other details mentioned in the Economic Survey 2021-22

Factors to support growth in 2022-23



Widespread vaccine coverage



Gains from supply-side reforms



Easing of regulations



Robust export growth



Ramped up capital spending

Source: PIB

Fiscal space: Buoyant tax revenues and government policies have created “headroom for taking up additional fiscal policy interventions”.

The **banking sector** is well placed to support the economy, as it is now “well capitalised and the overhang of Non-Performing Assets seems to have structurally declined”. For instance, The gross NPA and net NPA ratios declined from 11. 2% and 6% respectively in 2017-18 to 6. 9% and 2. 2% at end-September 2021.

Vaccine economics: The Survey says the progress of vaccination should be seen not just as a health response indicator, but also as a buffer against economic disruptions, especially in the contact-intensive sectors, caused by repeated pandemic waves.

Over the course of a year, India delivered 157 crore doses that covered 91 crore people with at least one dose and 66 crore people with both doses.

India’s external sector: With the sizeable accretion of foreign exchange reserves India’s external sector is resilient for the withdrawal of liquidity measures.

Barbell Strategy: The Government of India opted for this strategy to overcome challenges in repeated waves of infection, supply-chain disruptions and global inflation. The strategy includes combined safety nets to support the vulnerable on one hand, and a flexible ‘Agile’ framework that used feedback loops and real-time responsiveness on the other.

a) Providing a bouquet of safety-nets to cushion the impact on vulnerable sections of society and the business sector, b) Significant increase in capital expenditure on **infrastructure** to build back medium-term demand, c) Aggressively implementing supply-side measures to prepare the economy for the sustained long-term expansion.

Supply-side reforms performed: One of the distinguishing features of India's economic response to the pandemic has been an emphasis on supply-side reforms rather than a total reliance on demand management. These reforms include:

a) **Factor market reforms:** Deregulation of sectors like space, drones, geospatial mapping, trade finance factoring; process reforms like those in government procurement and in the telecommunications sector; **removal of legacy issues like retrospective tax**; privatization, etc.

b) **Reforms aimed at improving the resilience:** These include climate/environment-related policies; social infrastructure such as the public provision of tap water, toilets, basic housing, insurance for the poor, a strong emphasis on reciprocity in foreign trade agreements, and so on.

Read more: [24th Financial Stability Report \(FSR\), December 2021 – Explained, pointwise](#)

What are the challenges highlighted by the Economic Survey 2021-22?

Inflation pressures: WPI inflation has been running in double digits, partly due to base effects. The Survey flags inflation as an issue as inflation is vulnerable to “imported inflation, especially from elevated global energy prices”.

The survey mentioned that elevated inflationary pressures could potentially lead to the unwinding of liquidity measures by systemically important central banks, including the US Federal Reserve.

Private consumption and formal sector jobs: The Government's quarterly surveys on urban employment show that jobs have shifted to the informal sector. Similarly, private consumption in 2021-22 is not expected to reach the level that existed two years ago even though the overall GDP will be higher.

Challenges in global trade: Supply-side disruptions, exacerbated by the recovery in demand, pose significant risks for global trade. The biggest downside risk comes from the pandemic. The survey says that along with longer port delays, higher freight rates, and the shortage of shipping containers and inputs such as semiconductors.

Other challenges: Unexpected headwinds from geopolitical developments and spikes in energy prices remain a risk.

What are the suggestions mentioned in the Economic Survey 2021-22?

Change in the Energy sector: The report calls for a “diversified mix of sources of energy of which fossil fuels are an important part”, but simultaneously calls for focus on building storage for intermittent electricity generation from solar PV and wind farms to ensure on-demand energy supply.

The survey asks the Government to **focus on the pace of the shift** from conventional fossil fuel-based sources, and **encourage R&D** to ensure an effortless switch to renewable sources of energy.

Use the Government fiscal space: In addition to capital expenditure, the Government needs to use the fiscal space to help contact-intensive services sectors. This will improve the job market and increase private consumption.

Supply-side reforms: The survey calls for an emphasis on **developing a supply-side strategy** to deal with the long-term unpredictability of the post-Covid world, emanating mainly from factors such as changes in consumer behaviour, technological developments, geopolitics, climate change, and their potentially unpredictable interactions.

The Survey proposes the **use of the Agile approach** to policymaking with 80 high-frequency indicators in an environment of “extreme uncertainty”. The approach, used in project management and technology development, assesses outcomes in short iterations while constantly making incremental adjustments.

To conclude, the Indian economy is in a good place – macro-indicators are reasonably healthy and the growth engine looks primed to deliver the world’s highest growth rate. Overall macroeconomic stability indicators suggest that the Indian Economy is well-placed to take on the challenges of 2022-23, and one of the reasons that the Indian Economy is in a good position is its unique response strategy.

Union Budget 2022-23: Highlights and Concerns – Explained, pointwise

Introduction

The Union Minister for Finance & Corporate Affairs has tabled the Union Budget 2022-23 in Parliament. This year’s Union Budget seeks to complement macroeconomic level growth with a focus on micro-economic level all-inclusive welfare.

While observing that India’s economic growth in the current year is estimated to be 9.2%; the Finance Minister remarked, “India is celebrating *Azadi ka Amrit* Mahotsav, and it has entered into **Amrit Kaal**, the 25-year-long lead-up to India@100... The **budget lays a blueprint for (the next 25 years)**, which is futuristic and inclusive. ...And (provide) big public investment for modern infrastructure, readying for India at 100.”

Must read: [Major Highlights of the Economic Survey 2021-22 – Explained, pointwise](#)

What are the major highlights of Union Budget 2022-23?

PLI Scheme

60 lakh new jobs to be created under the Production Linked Incentive scheme in 14 sectors. PLI Schemes have the potential to create an additional production of Rs. 30 lakh crore.

A new scheme for design-led manufacturing will be launched to build a strong ecosystem for 5G. Apart from that, the budget also announced 5G auctions in FY23.

Entering *Amrit Kaal*, the budget provides an impetus for growth along with **four priorities**:

Infrastructure: PM GatiShakti National Master Plan

National Master Plan For World Class Modern Infrastructure



- Completing 25,000 Km National Highways in 2022-23
- Unified Logistics Interface Platform
- Open Source Mobility Stack



- Integration of Postal and Railways Network
- One Station One Product
- 400 New-generation Vande Bharat Trains



- Multimodal Connectivity Between Urban Transport & Railway Stations
- National Ropeways Development Plan
- Capacity Building for Infrastructure Projects

Source: PIB

The scope of [PM GatiShakti National Master Plan](#) will **encompass the seven engines** for economic transformation, seamless multimodal connectivity and logistics efficiency. The 7 engines include Roads, Railways, Airports, Ports, Mass Transport, Waterways and Logistics Infrastructure.

The budget also proposed a new PM Gati Shakti Master Plan for Expressways will be formulated in 2022-23 to facilitate faster movement of people and goods.

Road Transport: National Highways Network to be expanded by 25,000 Km in 2022-23 with outlay of Rs. 20,000 Crore.

Railways: a) **One Station, One Product concept** to help local businesses & supply chains. b) 2,000 Km of the railway network to be brought under **Kavach**, the indigenous world-class technology and capacity augmentation in 2022-23. c) 400 new generation [Vande Bharat Trains](#) to be manufactured during the next three years.

Parvatmala, National Ropeways Development Program: The program to be taken up on PPP mode. Contracts to be awarded in 2022-23 for 8 ropeway projects of 60 Km length.

Inclusive Development

Drinking Water for All

Implementation of Rs 44,605 cr Ken Betwa Link Project:

- **Benefitting 9.08 lakh hectare farm land**
- **Providing drinking water to 62 lakh people**
- **Generating 130 MW power (solar and hydro)**

5 more such projects under implementation:

Damanganga-Pinjal, Par-Tapi-Narmada, Godavari-Krishna, Krishna-Pennar and Pennar-Cauvery

Source: PIB

What's In It For Me? Startups

- Integration of central and state level systems through IT bridges
- Establishing C-PACE to facilitate voluntary winding up of companies
- Opening up defence R&D for industry, startups and academia
- Significant allocations under various PLI Schemes in 2022-23
- Support to 5G under PLI scheme
- Startups to be promoted to facilitate Drone Shakti for Drone-As-A-Service
- Extending period of incorporation of eligible startups for providing tax incentives

Source: PIB

Agriculture: a) **Chemical-free Natural farming** to be promoted throughout the county. The initial focus is on farmer's lands in 5 Km wide corridors along river Ganga. b) **'Kisan Drones'** for crop assessment, digitization of land records, spraying of insecticides and nutrients.

Ken Betwa project: Rs. 1,400 crore outlay for implementation of the Ken – Betwa link project which will benefit 9.08 lakh hectares of farmers' lands.

MSME Sector: a) **Udyam, e-shram, NCS** and **ASEEM** portals to be interlinked. b) **Emergency Credit Linked Guarantee Scheme (ECLGS)** to be extended up to March 2023. c) **Raising and Accelerating MSME performance (RAMP)** programme with an outlay of Rs 6000 Crore to be rolled out.

Skill Development: a) **Digital Ecosystem for Skilling and Livelihood (DESH-Stack e-portal)** will be launched to empower citizens to skill, reskill or upskill through on-line training. b) Startups will be promoted to facilitate 'Drone Shakti' and for Drone-As-A-Service (DrAAS).

What's In It For Me? Youth (2/2)

- One Class One TV Channel programme to be expanded to 200 TV channels
- Virtual labs and skilling e-labs to promote critical thinking skills
- Digital University with world-class quality universal education
- Digital Ecosystem for Skilling and Livelihood (DESH-Stack) e-portal for online training
- Startups to be promoted to facilitate Drone Shakti for Drone-As-A-Service

Source: PIB

Education: a) 'One class-One TV channel' programme of [PM eVIDYA](#) to be expanded to 200 TV channels. b) **Virtual labs and skilling e-labs** to be set up to promote critical thinking skills and a simulated learning environment. c) **Digital University** for world-class quality universal education with a personalised learning experience to be established.

Health: a) An open platform for **National Digital Health Ecosystem** to be rolled out. b) **National Tele Mental Health Programme** for quality mental health counselling and care services to be launched. c) Two lakh anganwadis to be upgraded to [Saksham Anganwadis](#).

Water and Housing: a) Rs. 60,000 crore allocated to cover 3.8 crore households in 2022-23 under Har Ghar, Nal se Jal, b) Rs. 48,000 crore allocated for completion of 80 lakh houses in 2022-23 under PM Awas Yojana.

Prime Minister's Development Initiative for North East Region (PM-DevINE)

- Initial allocation of Rs 1,500 crore will be made initially in 8 projects
- Will fund infrastructure, in the spirit of PM GatiShakti, and social development projects based on felt needs
- Will be implemented through the North-Eastern Council
- Will not be a substitute for existing central and state sponsored schemes

Source: PIB

Prime Minister's Development Initiative for North-East Region (PM-DevINE): New scheme PM-DevINE launched to fund infrastructure and social development projects in the North-East.

Vibrant Villages Programme: It is for the development of Border villages with sparse population, limited connectivity and infrastructure on the northern border.

Productivity Enhancement & Investment, Sunrise opportunities, Energy Transition, and Climate Action

Banking: **a)** 100% of 1.5 lakh post offices to come on the core banking system. **b)** Scheduled Commercial Banks to set up 75 Digital Banking Units (DBUs) in 75 districts.

Land Records Management: Unique Land Parcel Identification Number for IT-based management of land records.

Other initiatives: **a)** Centre for Processing Accelerated Corporate Exit (C-PACE) to be established for speedy winding-up of companies. **b)** An animation, visual effects, gaming, and comic (AVGC) promotion task force to be set up to realize the potential of the AVGC sector.

Export Promotion and AtmaNirbharta in Defence:



- SEZ Act to be replaced with a new legislation that will enable the states to become partners in 'Development of Enterprise and Service Hubs'.
- Large existing and new industrial enclaves to optimally utilise available infrastructure and enhance competitiveness of exports.
- To facilitate export of jewellery through e-commerce, a simplified regulatory framework shall be implemented by June this year
- To incentivise exports tax exemptions provided on items such as embellishment, trimming, fasteners etc- that may be needed by exporters of handicrafts, textiles and leather garments etc.

Source: PIB



Source: PIB

Sunrise Opportunities: Government contribution to be provided for R&D in Sunrise Opportunities like Artificial Intelligence, Geospatial Systems and Drones, Semiconductor and its eco-system, Space Economy, Genomics and Pharmaceuticals, Green Energy, and Clean Mobility Systems.

Energy Transition and Climate Action:



Source: PIB

Towards A Carbon Neutral Economy

5-7% biomass pellets to be co-fired in thermal power plants resulting in:

- *CO₂ savings of 38 MMT annually*
- *Extra income to farmers*
- *Job opportunities to locals*
- *Lower stubble burning in agriculture fields*

Energy efficiency and savings measures to be promoted through the Energy Service Company (ESCO) business model

4 pilot projects for coal gasification and conversion of coal into chemicals

Policies and required legislative changes to promote agroforestry and private forestry will be brought in

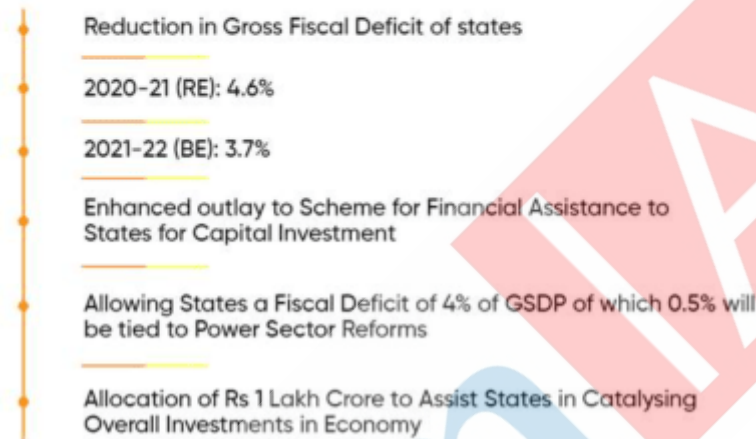
Financial support to farmers belonging to SCs and STs, who want to take up agro-forestry

Source: PIB

Financing of investments

FINANCING OF INVESTMENT

PROVIDING GREATER FISCAL SPACE TO STATES



Source: PIB

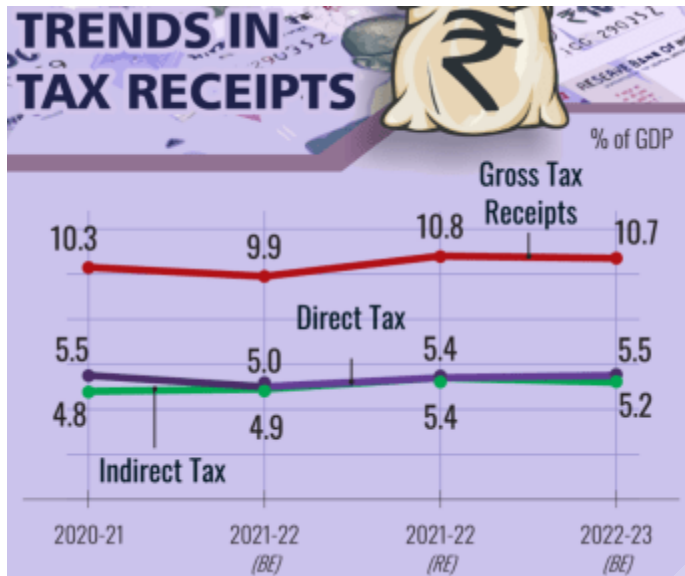
GIFT-IFSC: a) World-class foreign universities and institutions to be allowed in the **GIFT City**. b) An International Arbitration Centre to be set up for timely settlement of disputes under international jurisprudence.

Mobilising Resources: a) Data Centres and Energy Storage Systems to be given infrastructure status. b) Sovereign Green Bonds to be issued for mobilizing resources for green infrastructure.

Central Bank Digital Currency: Introduction of Digital Rupee by the Reserve Bank of India starting 2022-23.

What are the Tax proposals mentioned in Union Budget 2022-23?

Direct Taxes



Source: PIB

A Scheme for taxation of virtual digital assets: Specific tax regime for virtual digital assets was introduced. Any income from the transfer of any virtual digital asset is to be taxed at the rate of 30% in the hands of the recipient with 1% deducted at the source.

Tax relief to persons with disability.

Parity in National Pension Scheme Contribution: Tax deduction limit increased from 10% to 14% on employer's contribution to the NPS account of State Government employees. This will bring them at par with central government employees.

Apart from that, tax incentives to IFSC, rationalization of Surcharge, Health and Education Cess and its income and profits will not be allowed as business expenditure, rationalizing TDS Provisions has also been done.

Indirect taxes**Indirect Tax Proposals 1/2**

IT-Driven Customs Administration in Special Economic Zones



Phasing Out Concessional Rates in Capital Goods and Project Imports Gradually and Apply Moderate Tariff of 7.5%



Unblended fuel to attract additional differential excise duty



Customs Duty Rates Calibrated to Provide Graded Rate Structure to Facilitate Domestic Electronics Manufacturing

Source:PIB

Indirect Tax Proposals 2/2

Rationalisation of Exemptions on Implements & Tools for Agricultural Sector Manufactured



Extension of Customs Duty Exemption to Steel Scrap



Reduction of Duty on Certain Inputs Required for Shrimp Aquaculture



Review of Customs Exemptions & Tariff Simplification

Source: PIB

What is the core strategy adopted by the Union Budget 2022-23?

Virtuous Cycle of Capital Expenditure-

Multiplier Effect on Economy

Public investment to continue to take the lead and pump-prime the private investment and demand in 2022-23.

Outlay for capital expenditure is once again being stepped up sharply by 35.4% from Rs 5.54 lakh crore in 21-22 to Rs 7.50 lakh crore in 2022-23

Capex has increased to more than 2.2 times the expenditure of 2019-20. This outlay in 2022-23 will be 2.9% of GDP

'Effective Capital Expenditure' (including Grants-in-Aid to States) of the Central Government is estimated at Rs 10.68 lakh crore in 2022-23, which will be about 4.1% of GDP

Source: PIB

The budget chose an **investment-led growth strategy** that **substantially ramps up capital expenditure**, while largely holding back revenue expenditure (that is, expenditure to meet day-to-day expenses).

Capital expenditure allocations have increased from 1.65% of GDP in FY20 to 2.16% in FY21 to 2.6% in FY22 and are projected to rise to 2.9% in FY23. Capital spending allocation rose to the highest in 18 years.

According to different studies, one rupee spent towards capital expenditure can give returns between Rs 2.5 and Rs 4.8 (over periods ranging from 1-7 years).

This will **a)** Increase India's GDP growth rate, which was decelerating since 2017-18; **b)** Reduce the unemployment rate which is touching a four-decade high, **c)** Address the **K-shaped recovery**, which resulted in **significant scars for economically weaker sections**. Many projects are local in nature — rural roads instead of a big highway — they may be more effective in providing relief

to the weaker sections of the economy; **d)** Provide much higher returns to the overall GDP; **e)** Create new productive assets that boost future productivity.

New roads, ports etc will reinvigorate several other industries through forward and backward linkages e.g., infrastructure projects will support the cement and steel sectors while enhancing employment. This will **increase private final consumption expenditure (PFCE)**, which is below 2018 levels so far.

In time, as tax revenues from new economic activity increase and as private sector investments become self-sustaining, the government will retreat from its leading role in investments, thus bringing down its borrowing requirements.

Other significant things in the Union Budget 2022-23

Apart from that, Budget 2022-23 has introduced a number of measures to reduce compliance burden, encourage voluntary compliance, reduce litigation, and improve the ease of doing business.

For many who feared that the government will totally ban cryptocurrencies, the tax of 30% came as a relief.

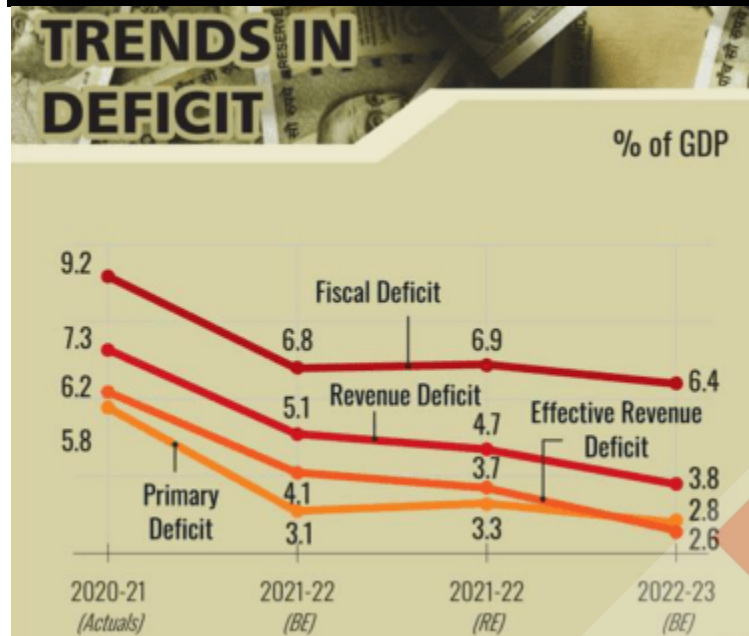
India's dramatically **increased IT and telecom allocations** are an investment in its future. The rollout of 5G promises to create a foundation for next-generation technologies.

Along with an emphasis on semiconductor manufacturing announcements related to the introduction of a digital currency, the issuance of e-passports; IT-based land records etc. **put faith in India's technological capabilities**. This will enable India to transition to a more digital economy.

In **education**, the need for bridging the digital divide has been echoed. The setting up of 200 TV stations, as well as digital universities, are important steps.

The need for more **integrated urban planning** in making the urban sector a true engine of growth has been echoed in the budget with the recommendation of the formation of a high-level committee.

What are the concerns associated with the Union Budget 2022-23?



Source: PIB

The budget shows **1) Increasing protectionist trend and continued differentiation in import duties.** Minute rate differences and taxing inputs at lower rates increase the effective rate of protection, adversely impact competitiveness and give rise to special interest groups lobbying for higher import duties, **2) The excessive protection and reservation given to MSMEs** might prevent them from becoming bigger and more competitive to take advantage of the scale economy, **3) The government's fiscal deficit (6.4%)** was a cause of concern. In FY22, the government is Rs 1 trillion short of its disinvestment target and incurred capital expenditures to absorb some of Air India's liability. But, the budget spent more for providing direct financial support to various sections of society. This will worsen the fiscal deficit further.

Note: The revised fiscal deficit (FD) of the Centre for the current year (2021-22) exceeds the budgeted figure of ₹15 trillion by ₹0.8 trillion. That is 0.4 % of GDP more than the budgeted level.

4) Issues with Capex push: Capital expenditure has long gestation periods and the expected benefits to the common people may take time to accrue. When all other engines of growth are struggling the investment cycle might not be sustainable. **5) The Government should have looked at putting more money in the hands of the people.** For instance, the government missed out to introduce an urban version of **MGNREGS** and cutting the **high excise duty on petrol and diesel**. Several critics have argued that the Government should have spend more on the healthcare sector, given the high suffering of the people during the 2 years of Pandemic. **6) On the taxation side, there has not been any major giveaway that may have been expected.**

What should be done to improve the Indian Economy?

Despite the hype regarding the Union Budget, **almost 60% of the actual spending is at the State level.** Hence, the States should implement the policies and undertake allocated spending.

The top priority for India now is the **creation of jobs.** Many have lost their jobs during the pandemic. Along with infrastructure, **health and tourism,** are the two other sectors that have huge employment generating potential. Hence the government has to work on these sectors too

on top priority. Linking some PLI incentives to job creation would have been something worth trying.

The **GST Council** must now engage in more decisive action in broad banding, inverted duty structure and including excluded items as well as improving all-round compliance.

Apart from that, **1) Public outlay on health** has remained somewhat static. The government has to increase the allocation to the health sector to reap compoundable benefits, **2) Faster implementation of the delayed programme of the BharatNet Scheme** for providing high-speed digital connectivity to all villages, **3) Innovative steps to garner private investment through guarantees and regulatory changes** are important.

By and large, Budget 2022-23 is in the desired direction (focus on improving the supply side) in the given circumstances. It has also presented a 25-year blueprint. But the impact of the Budget on the economy and the implementation of the blueprint will depend on the efficiency with which the various proposals are implemented.

Digital Rupee: Advantages and Challenges – Explained, pointwise

Introduction

The Union Minister for Finance & Corporate Affairs has tabled the [Union Budget 2022-23](#) in the Parliament. One of the major highlights of this year's budget is the announcement of Government's decision to launch Digital Rupee – India's version of a Central Bank Digital Currency (CBDC).

The announcement is a reiteration of the [SC Garg Committee](#) that had asked the RBI to introduce its own digital currency and ban private cryptocurrencies completely.

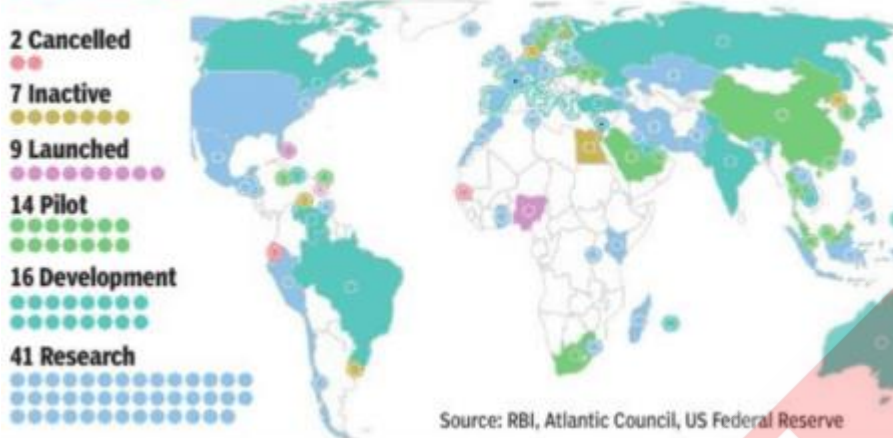
What is a Central Bank Digital Currency?

A Central Bank Digital Currency (CBDC), or **national digital currency**, is the digital form of a country's fiat currency. Instead of printing paper currency or minting coins, the central bank issues electronic tokens. This token value is backed by the full faith and credit of the Government.

Read more: [RBI for widening scope of 'bank note' to include digital currency](#)

About the status of CBDC at the global level

COUNTRIES BY CBDC STATUS



Source: TOI

Currently, 9 countries already use digital currencies. Among the nine countries with active CBDCs, eight are small island nations in the Caribbean. Currently, at least 87 countries are researching or developing CBDCs, including 14 who are running pilot programmes.

1) Sweden is conducting real-world trials of their digital currency (**Krona**); **2) The Bahamas** has already issued their digital currency “**Sand Dollar**” to all citizens; **3) In October 2021, Nigeria** became the latest country to introduce a digital currency, **e-Naira**. **4) China started a trial run of their digital currency e-RMB** amid pandemic. They plan to implement pan-China in 2022. This is the first national digital currency operated by a major economy.

Countries like Japan, Singapore are currently examining the various facets of such a transition. A few days ago, the US Federal Reserve also released a report outlining the costs and benefits of issuing a central bank-backed digital dollar.

Note: CBDC is just a wallet or an electronic purse, issued by a central bank. There are many such wallets operating in the Indian financial system. The CBDC will be one of them, but with a difference that it will be issued by the nation’s central bank.

About the steps announced by the Finance Minister on digital currency(Digital Rupee)?

- Introduction of Digital Rupee, using blockchain and other technologies, by RBI starting 2022-23
- Will lead to more efficient and cheaper currency management system
- Introduction of Central Bank Digital Currency (CBDC) will give big boost to digital economy

Source: PIB

Reserve Bank of India will launch a Digital Rupee by 2022-23. The CBDC will be backed by the blockchain and other technologies. The digital rupee will be the digital form of the physical rupee and will be regulated by the RBI.

The budget announcement was made after consultations with the RBI, and the RBI will decide by when it is ready to launch the digital rupee.

According to the Prime Minister, the digital rupee could be exchanged for cash and will open new opportunities in the fintech sector.

Recently, RBI Deputy Governor has said that the central bank is “working towards a **phased implementation strategy**” and will examine the CBDCs in the wholesale and retail segments.

Must read: [Cryptocurrency tax: Budget 2022 unveils norms for virtual digital assets](#)

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Will other digital currencies be allowed in India?

According to the Secretary, Department of Economic Affairs, “**digital rupee will be the first and only digital currency** in India.” He also explained that the taxation of crypto assets does not legitimize their usage, as crypto-assets do not mean cryptocurrencies alone. According to him, Crypto, in a general sense, is a digital asset that uses crypto technology.

The Budget has used the term “**Virtual Digital Assets**” (VDAs). VDAs are a superset for all digital assets being transacted on the blockchain, such as cryptos, non-fungible tokens (NFTs), or any other virtual asset.

***Note:** The **draft Cryptocurrency and Regulation of Official Digital Currency Bill, 2021** aims to prohibit all private cryptocurrencies. The Bill also aims to lay down the regulatory framework for the launch of an “official digital currency”.*

Read more: [Crypto-assets: To ban or not to ban?](#)

What are the prerequisites before releasing the Digital Rupee?

First, the **design of the currency** with regard to how it will be issued, the degree of anonymity it will have, the kind of technology that is to be used, etc., needs to be sorted out.

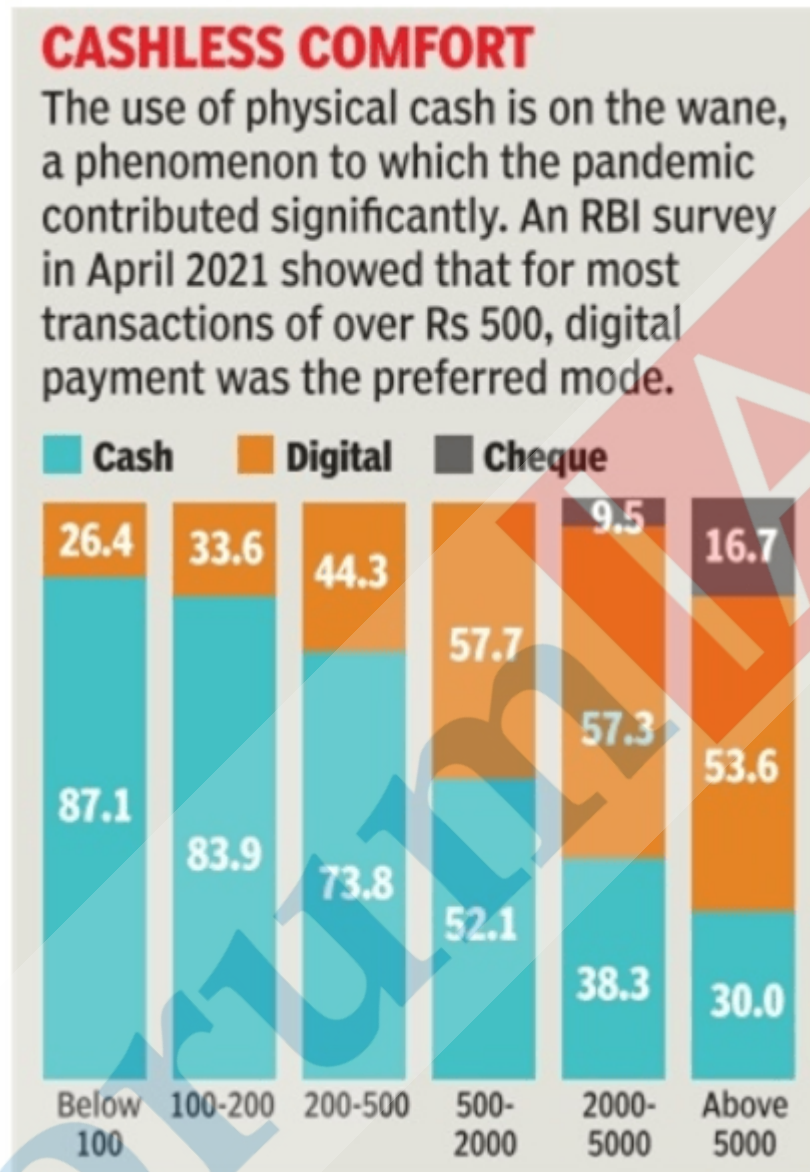
Second, CBDC would need an entirely **new centralized payment system**. This system has to be **linked to electronic wallets** that reside on prepaid cards, smartphones, or other electronic devices.

Third, the government **has to develop an interoperable system** between the other virtual digital assets (VDAs) and the digital rupee for seamless transfer of funds.

Fourth, digital money will be programmable money. Hence, the government has to come out with **suitable products and services** using the digital rupee, such as smart contracts.

Read more: [Introducing National Digital Currency in India – Explained, Pointwise](#)

What are the advantages of announcing a digital rupee or CBDC?



Source: TOI

According to the Prime Minister, the Central bank digital currency or the digital rupee will **make online payments more secure and risk-free** and **boost the digital economy** in the years to come. He also mentioned that the digital rupee will lead to ease in the **development of a global digital payment system**.

Further, introducing the digital rupee will **revolutionise the fintech sector** by creating new opportunities and **lessen the burden in handling, printing, logistics management of cash**.

Digital Rupee will lead to a whole lot of improvement in terms of **digitization of the economy, ease of transfer**, not just within the country but across jurisdictions. Further, the Digital rupee **will prevent counterfeiting of currency** and a boost to the war on black money and corruption.

The Digital Rupee will **accelerate financial inclusion, lower costs for financial transactions**, especially in the case of cross-border transactions, the advantages of an **alternate payments system**, the **creation of another instrument in the monetary policy arsenal** of central banks.

Commercial banks sometimes fail, and depositors lose a big chunk of their money despite the deposit guarantee scheme, but when the money is parked with the central bank there is **no risk of default**.

CBDC will **reduce the need for card networks, payment gateways**. There are 1.2 billion mobile phone connections in India right now, but only 582 million bank accounts exist. The CBDC could help to bridge the disconnect.

Read more: [Taxing Cryptocurrency transactions](#)

The other advantages include,

Reducing systemic risk: There are about 3,000 privately issued cryptocurrencies in the world. According to IMF, the key reason for considering national digital currency is to counter the growth of private forms of digital money.

Industry estimates suggest there are 15 million to 20 million crypto investors in India, with total crypto holdings of around 400 billion rupees (US\$5.37 billion). Most cryptocurrency exchanges are asking people to invest and trade in cryptos without providing basic information about the product and the inherent risks.

There is a possibility of these companies going bankrupt without any protection. But the digital rupee has government backing in case of any financial crisis.

Reduce volatility: The national digital currency will be regulated by the RBI. So, there will be **less volatility compared to other digital currencies**.

Negative interest rate: In tough times, a Central Bank might want people to spend money, hence the concept of negative interest rates. But, presently it can't do so as people will simply withdraw their money from the banks. CBDCs will solve this problem. A negative interest rate could be easily mandated on CBDCs kept in the wallets.

Complement blockchain-led decentralised finance: All crypto assets' final returns will be in sovereign currency, and therefore the digital rupee will aid the virtual digital asset(VDA) markets by bridging the gap between fiat money and decentralised finance.

Read more: [Why the Reserve Bank wants to have its own digital currency](#)

What are the challenges associated with issuing a digital rupee?

Globally, pilot projects on CBDC have been underway since 2014. However, progress is slow because this seemingly simple innovation can have unforeseen consequences. These include,

Challenges to the entire banking system: The impact of the digital rupee on the banking system is not clearly understood e.g., if CBDCs are indeed efficient vehicles for retail savers, this could adversely affect bank deposits. Hence, there might be an impact on the role of banks in credit creation, RBI's monetary policy, etc.

Further, **Sweden's Riksbank**, which launched its e-krona project in 2017, is **still studying the need and potential impact** of e-krona on Sweden's economy.

Threat to financial stability: If the RBI offered interest rates on the digital rupee, then it will directly compete with banks. If the regulator ends up competing with the regulated entities, the banking system may see erosion in deposits, threatening the financial sector's stability.

No incentive to switch to digital rupee for user: From a user's standpoint, there is no real incentive to switch to a CBDC as a growing proportion of **retail transactions are already done digitally or by using UPI-based fast payment systems.**

Potential cybersecurity threat: India is already facing [many cyber security threats](#). With the advent of digital currency, cyberattacks might increase and threaten digital theft like the **Mt Gox bankruptcy case.**

End of privacy: The digital currency must collect certain basic information of an individual so that the person can prove that he's the holder of that digital currency. This basic information can be sensitive ones such as the person's identity, fingerprints etc.

Further, CBDCs will leave a digital trail even with the phone turned off. For instance, trails such as paying for food, fare and lodging.

Operational issues: There will be many operational issues for the implementation of CBDC, including the KYC (know your customer) norms and privacy of data.

Read more: [Rumblings of the coming central bank digital currency](#)

What should be done to improve the performance of the digital rupee?

The Government should **work towards an interoperable system** between the virtual digital asset and the digital rupee. It will unleash opportunities for not only those working or wanting to work in the decentralised finance space (VDAs), but also for traditional finance industry exponents.

Creation of adequate cybersecurity methods: Before the introduction of National Digital currency, the Government has to create certain important things, such as, training of the law enforcement agencies, creating a **policy of basic information** assessed while issuing, verifying someone's digital currency.

The RBI **needs to create a [regulatory sandbox](#)**, with limited participants and pre-specified uses, before launching its own digital currency. Only then can the rupee hold its own against other currencies.

Preserving the financial sector stability: The digital rupee can be issued via a **distributed ledger**, synchronised between the banks and the RBI and not a centralised ledger, held solely by the RBI. This **decentralised model** will not end up in competition between RBI and other banks.

Read more: [Watch out for an official central bank digital rupee on its way in](#)

Though the introduction of a digital rupee provides various advantages for the government, the government has to create necessary safeguards before rolling it out and must bridge the digital divide.

Biological Diversity Amendment Bill, 2021: Provisions and Concerns – Explained, pointwise

Introduction

The Union Budget 2022-23 highlighted the need for energy transition and mitigating the climate change. At the same time, the proposals for single-form clearances for ease of doing business seem contrary to the climate concerns and commitments. The reflection of such opposite nuances is very much evident in the recently proposed amendments to the [Biological Diversity Act, 2002](#).

To reduce the compliance burden, facilitate investments and encourage a conducive environment for research, the Government has proposed various changes to the existing Biodiversity law through the Biological Diversity Amendment Bill, 2021, that completely change the fundamental principles of conservation of biodiversity.

About the Biodiversity Act, 2002

The Biodiversity Act, 2002 was brought with an aim to conserve India's biological diversity and ensure sustainable use of biological resources. The Act ensures that the benefits accrued from the use of traditional and genetic resources are shared with the local communities with prior and informed consent-approval of local communities in a fair and equitable manner.

The Act was an outcome of the [Convention on Biological Diversity, 1992](#) (which India has adopted and ratified). Later, India also notified Access and Benefit Sharing Regulations, 2014 to give effect to the [Nagoya protocol, 2010](#) (India became a party in the year 2014).

***Note:** Nagoya Protocol is a 2010 supplementary agreement to the 1992 Convention on Biological Diversity (CBD). The Nagoya Protocol is about "Access to Genetic Resources" and the "Fair and Equitable Sharing of Benefit" arising from their utilization.*

The act provides that the **benefits accrued** from the use of traditional knowledge **should benefit the communities** and if the conserver is not specifically known, the access and **benefit-sharing amount can be used for conservation** activities.

This was done to protect the biological resources and prevent the commercial and intellectual property use of associated traditional knowledge without sharing the benefits with the conservers of biodiversity.

The Biodiversity Act, 2002 was brought with a three-tier decentralised system, involving the **National Biodiversity Authority (NBA)**, **State Biodiversity Boards (SBB)** and the **Biodiversity Management Committees (BMC)** at the local level.

Must read: [Salient provisions of Biodiversity Act, 2002](#)

What are the salient provisions of Biological Diversity Amendment Bill, 2021?

- **Firstly**, the Bill **exempts registered AYUSH medical practitioners** from giving prior intimation to State Biodiversity Boards for accessing biological resources for certain purposes.
- **Secondly**, the Bill **exempts cultivated medicinal plants** from the purview of the Act.
- **Thirdly**, the Bill **facilitates fast-tracking of research, and patent application** process.
- **Fourthly, violations of the provisions of the law** (related to access to biological resources and benefit-sharing with communities) that are currently treated as criminal offences and are non-bailable have been **proposed to be made civil offences**.

- **Fifthly**, the Bill allows foreign investment in research in biodiversity. But, this investment has to be made through Indian companies involved in biodiversity research alone.
- **Sixthly**, the new Bill introduces a 'member secretary' post to be appointed by the Central Government. The Member-Secretary shall be the chief coordinating officer and the convener of the National Biodiversity Authority and shall assist that Authority in the discharge of its functions under of the Biodiversity Act

Read more: [Role of National Mission on Biodiversity and Human Well-Being on India's Biodiversity](#)

What are the advantages of the Biological Diversity Amendment Bill, 2021?

First, Boosting Indian Medicine System: The Bill is expected to give much-needed fillip to the "Indian system of medicine" through **a)** Facilitating research and patent filing for AYUSH Practitioners, **b)** Encouraging farmers to increase the cultivation of medicinal plants, **c)** Empowering local communities to utilise resources, particularly of medicinal value, such as seeds.

Second, The Bill is expected to **reduce the pressure on wild medicinal plants** by encouraging the cultivation of medicinal plants.

Must Read: [Acts pertaining to Forests in India](#)

Third, the Bill intends to expand the composition of the NBA by adding many ex-officio members from different Ministries of the Central Government. This might facilitate the **adoption of biodiversity in national policymaking**.

Fourth, the changes proposed in the Bill are expected to **provide a conducive business environment:** By simplifying the patent application process, widening the scope of access and benefit-sharing with local communities, the Bill will provide a conducive environment for collaborative research and investments.

What are the concerns associated with the Biological Diversity Amendment Bill, 2021?

Legal experts have expressed concerns that easing the norms for the sector could be detrimental to ecology for reasons like,

Paving the way for biopiracy: According to the 2002 Act, the benefits accrued from the use of traditional knowledge should benefit the communities. The Bill has excluded the term "bio-utilisation." Bio-utilization is an important element in the parent Act. The Bill excludes such codified traditional knowledge from the definition of benefit claimants. Excluding 'codified traditional knowledge' would be detrimental to the interests of rural and tribal communities. Further, the Bill allows commercial utilisation and intellectual property rights within or outside India with prior approval of the NBA.

The new changes would open a floodgate for **biopiracy** and commercial utilisation of the biological resources that have been conserved and protected by the local communities for generations.

Read more: [India State of Forest Report 2021 – Explained, pointwise](#)

Exemption of AYUSH companies from the purview of law: AYUSH industries or Indian companies are not the traditional knowledge keepers. In the **Divya Pharmacy vs Union of India**,

2018 case, the Uttarakhand High Court mandated that all foreign and Indian companies, institutions, individuals must seek prior consent and approval for access and benefit-sharing with the local community.

The Bill exempts registered AYUSH practitioners from intimating SBBs before obtaining biological resources. This is a clear violation of the 2018 judgement.

Violation of Forest Rights Act, 2006: The new Bill violates the Forest Rights Act, 2006 that recognises and authorises the Gram Sabha for prior permission and approval in case of any access to forests. More than 85% of the raw materials for AYUSH medicines come from the forests.

The Bill exempts cultivated medicinal plants. This would allow companies to show the biological resources of the forests (owned or leased under them) as cultivated areas and escape from the requirement of prior approval or share of benefits with local communities. It is **practically impossible** to detect which plants are cultivated and which are from the wild.

Dilution of penal provisions: The Bill has not only diluted the penalty provision by replacing imprisonment with fines in the proposed legislation but also replaced the Judge (Court) with a joint secretary-level officer to determine the penalties.

The monetary penalty would be nothing for big corporations in the cases of contravention or attempts to contravene.

Read more: [Proposed Changes to Forest Conservation Act 1980 – Explained, pointwise](#)

What should be done to preserve Biological Diversity?

Respect and recognise the indigenous communities: Recent international conventions and conferences on biodiversity have recognised the indigenous communities as environmental defenders, whose voice is irrepressible and critical. So, the Government has to recognise the role of indigenous communities and ask AYUSH practitioners/industries to work in coordination.

The Government must build trust between its agencies and the people. This will **facilitate effective implementation of the Forest Rights Act (FRA):**

Prevent bio-piracy: India has its own share of experiences and struggles on biopiracy cases, such as for neem and turmeric. So, at no cost should India allow commercial utilisation of traditional knowledge without the benefits accruing to the custodians of the knowledge.

Document study under PBRs: The People's Biodiversity Registers (PBRs) entail complete documentation of biodiversity in the area like the plants, food sources, wildlife, medicinal sources, etc. The Government should use the PBRs to document traditional knowledge of status, history, uses, ongoing changes in biodiversity resources etc. This documentation can be useful to preserve the rights of the traditional knowledge holders.

Read more: [Biological Diversity Bill referred to Joint Committee of Parliament](#)

The new amendments might violate the constitutional provisions of the Right to Environment and the International Environmental Conventions and the Protocols that India is a party of. So, all the concerns raised by experts need to be addressed thoroughly.

[Kuruksheetra January Summary] Smart Farming: Towards Sustainable Agriculture – Explained, pointwise

Introduction

Smart farming is performing agricultural operations smartly with more precision, and it relies on the use of the Internet of Things (IoT) and Artificial Intelligence (AI). Smart agriculture addresses many issues related to crop production as it allows monitoring of the changes in climatic factors, soil characteristics, soil moisture, etc.

What is defined as climate-smart agriculture?

The FAO defines climate-smart farming as an approach that transforms agri-food systems towards green and climate-resilient practices.

It aims to tackle three main objectives: **(i)** Sustainably increasing agricultural productivity and incomes; **(ii)** Adapting and building resilience to climate change; and **(iii)** Reducing and/or removing greenhouse gas emissions, wherever possible.

The main idea of smart farming is **improving the spatial management practices** to increase crop production and avoid the misuse of fertilisers and pesticides.

What are the smart agriculture technologies available at present?

At present, Smart farming technologies can be divided into three main categories:

(i) Farm Management Information Systems (FMIS): These represent mainly software systems for collecting, processing, storing, and disseminating data in the form required to carry out a farm's operations and functions.

(ii) Precision Agriculture (PA): Precision agriculture is aimed at optimizing use of inputs through use of technology, improving economic returns and reducing environmental impact. Precision Agriculture is able to increase input efficiency using **remote sensing technologies** for data gathering (satellites, aircraft or UAVs), **sensors** for ground data acquisition, **wireless networks** for interconnecting them, **geospatial data analytics** and **Smart Decision Support Systems (SDSSs)** for optimised farming decision-making.

(iii) Agricultural Automation and Robotics: It involves application of automatic control, AI techniques and robotic platforms at all levels of agricultural production. **Robots** are being used in agricultural operations such as harvesting and weeding, and **drones** are being used to fertilise crops and monitor crop growth stages.

In short, Smart farming mainly relies on the use of **artificial intelligence (AI) and the Internet of Things (IoT) in cyber-physical farm management.**

Read more: [Year End Review: 2021- Ministry of Agriculture and Farmers Welfare](#)

Why is there a need for climate-smart agriculture?

There are many challenges associated with 21st-century agriculture. These include

First, Climate Change: Abrupt weather fluctuations around the world have put huge pressure on agricultural food products for quality and sustainable food production. Robots can reduce up to 80% of the environmental pollution caused by farm's pesticides.

Second, the natural resources are dwindling and there is an increasing pressure of population on agricultural systems. There is another issue of requirement of more feedstocks for a

potentially huge bioenergy market in many agriculture-dependent developing countries including India.

The **Food and Agriculture Organisation (FAO)** has estimated that the world population would reach 9.73 billion by 2050, and the increase will continue till it reaches 11.2 billion by 2100.

Third, challenges pertaining to agricultural production like soil degradation through salinity, nutrient deficiencies, low soil organic carbon content, lower groundwater table, etc.

Fourth, lack of adequate water: Water for irrigation is becoming scarce not only in arid and semi-arid regions but also in the high rainfall regions; because of the uneven distribution of rainfall patterns that is not suitable for most of the crops.

Fifth, lack of monitoring systems: According to the FAO, about **20-40% of crops are lost annually** due to pests and diseases due to lack of good monitoring system of the state of the crop.

Therefore, there is a need to make agriculture smart so that crop productivity could be sustained through the mitigation of such challenges.

Read more: [Government to Promote Drone use in Agriculture – Financial Support Being Extended Under ‘Sub-Mission on Agriculture Mechanization’](#)

How is the Government of India promoting smart farming?

India's **National Strategy on AI** aims to realise the potential economic and social benefits the technology offers. Further, the National Strategy on AI **recognises agriculture as one of the priority sector** areas for implementation of AI driven solutions.

Many ICAR Institutions have developed **various mobile applications** related to field crops, animals, horticultural crops etc. which helps in the identification and subsequent diagnosis and treatment of various plant diseases.

Agriculture Ministries both at the central and the state levels have been **using drones for anti-locust spraying**.

Recently, in India, the Government has released **Standard Operating Procedure (SOP) for use of [drones for the purpose of spraying pesticides](#)** on agricultural crops.

Read more: [\[Kurukshestra December Summary\] Rural Women: Key to New India's Agrarian Revolution – Explained, pointwise](#)

“Grain Bank Model”

Ergos has developed a unique model in the Agri-tech landscape called the “Grain Bank Model” that is providing doorstep access to end-to-end post-harvest supply chain solutions to small and marginal farmers. In this model, the farmers were able to convert their grains into tradable digital assets and avail credit against those assets through partner NBFCs and Banks and get better prices for their produce.

For instance, farmers have the flexibility to store/withdraw even a single bag of grains. Farmers get immediate liquidity and better income, as they don't have to sell all their produce at once at the prevailing market rates during harvest season.

What are the advantages of smart agriculture?

Digital Technologies will **enhance farmer incomes** and **increase the overall efficiency** of the agricultural production processes as well as the **entire value chain**.

Smart farming will provide **added value to the farmers** e.g., it will help in more accurate and timely decision-making and more efficient operation and management.

Smart farming will **improve soil health monitoring, facilitate Smart Irrigation, identify plant diseases, improve post-harvesting activities**, etc.

The other advantages include, **1) Increasing the amount of real-time data on the crops; 2) Remote monitoring and controlling of farms; 3) Controlling water and other natural resources; 4) Improving livestock management; 5) Accurate evaluation of soil and crops; 6) Improving agricultural production, and 7) eco-friendly farming.**

Must read: [\[Kurukshetra January Summary\] Agri-startups and Enterprises – Explained, pointwise](#)

What are the challenges in developing smart farming?

1) The main challenge delaying smart farming in India is the **small landholdings and fragmented farms; 2) Farmers are unable to adopt smart farming with limited knowledge and skills; 3) High cost associated with smart devices:** Drones are expensive, especially those with good software, hardware tools, devices, high-resolution cameras, and thermal cameras. An average Indian farmer cannot afford such devices; **4) Internet Connectivity:** The success of smart systems **depends on high-speed internet, advanced mobile devices, and satellites** to provide images and positioning; **5) Global Positioning System (GPS) signals:** GPS signal transmission is difficult in heterogeneous topography like hilly, forests and field with a dense tree planting; **6) Energy Requirement:** Data collection and processing centres and many IoT based sensors need uninterrupted and continuous energy for a successful application. Whereas, in many developing countries like India, there is a lack of access to uninterrupted power supplies in rural areas.

Read more: [Relation between Agri exports and water stress – Explained, Pointwise](#)

What should be done to promote smart farming in India?

Focus on faster adoption: The smart farming innovation must be focused on **a) Low-cost technology; b) Simple and easily portable tools; c) Developing a custom hiring system module and credit facility.**

Promote of Farmer Producer Organisations (FPOs): FPOs might make smart farming a reality by enabling farmers to afford expensive tools. They provide the biggest opportunity for smart farming/digital agriculture across the entire agriculture value chain, from inputs and production processes to post-harvest and value addition/food processing.

Smart agriculture also needs **ease of access and operations, easy maintenance of systems, timely grievance redressal and appropriate policy support.**

Robust research and development in the field of smart farming are needed so that smart farming can empower Indian farmers to sustain their farm productivity and livelihood.

In conclusion, smart farming will undoubtedly increase production and improve the efficient use of land, water and other resources used in agriculture. Therefore, smart agriculture is the future, and the Government should facilitate the proper adoption of smart farming technologies.

Regulating ART and Surrogacy: Associated Challenges – Explained, pointwise

Introduction

India's fertility industry has a potential market of US \$12 billion. In 2021, the Parliament enacted the Assisted Reproductive Technology (Regulation) Act that seeks to monitor and regulate Assisted Reproductive Technologies (ART) and surrogacy. While many welcome it as a step in the right direction, they also fear that the new laws leave no incentive for surrogates and donors, thus opening the scope for black-marketeering.

What is Assisted Reproductive Technology (ART) and Surrogacy?

The Act defines **Assisted Reproductive Technology (ART)** as all techniques that attempt to obtain a pregnancy by handling reproductive cells (sperm or oocyte) outside the body and transferring the gamete or the embryo into the reproductive system of a woman.

According to the Centers for Disease Control and Prevention (CDC) of the US, ART procedures involve surgically removing eggs from a woman's ovaries, combining them with sperm in the laboratory, and returning them to the woman's body or donating them to another woman.

Examples of ART services include gamete (sperm or oocyte) donation, **in-vitro-fertilisation** (fertilising an egg in the lab) and gestational surrogacy (the child is not biologically related to the surrogate mother).

Surrogacy is an arrangement where a woman bears a child for another couple or person with the intention of handing over the child to them after birth.

What is the progress of ART and Surrogacy legislation in India?

The Surrogacy (Regulation) Bill (SRB) 2016 was introduced to place a ban on commercial surrogacy and allow only altruistic surrogacy. The updated version, **SRB 2019—passed by Lok Sabha** in August 2019, was referred to a Select Committee.

The Committee recommended that the ART Bill to be brought first so that all the technical aspects could comprehensively be addressed by the bill. Accordingly, the government framed the **ART (Regulation) Bill, 2021**.

However, before the passage of the ART (Regulation) Act and the Surrogacy (Regulation) Act, 2021; India did not have any statutory laws regulating ART and surrogacy. The only guidelines available were the ones issued by the Indian Council of Medical Research (ICMR) in 2005.

Note: According to an Ernst & Young study, about 10-15% of all Indian couples are unable to conceive by natural means. The study also estimated that only 1% of them seek infertility evaluation. High costs seem to be a factor—an IVF cycle roughly costs ₹1.5-2 lakh. Besides, the chances of an IVF cycle leading to pregnancy is only 50-60%.

What are the salient provisions of the ART Act and Surrogacy Act?

The ART Act outlaws the sale of gametes (unfertilized egg and sperm), zygotes (a single cell organism resulting from a fertilized egg) and embryos (the early development stage of a human). The Act also allows insurance coverage for donors.

The Surrogacy Act permits only altruistic surrogacy permitted. Surrogacy is permitted only for intending couples who suffer from proven infertility or for any condition or disease specified through regulations. Surrogacy is not allowed for commercial purposes or for producing children for sale, prostitution or other forms of exploitation.

The ART Act also impose fines of ₹5-10 lakh and imprisonment of 5-10 years in case medical practitioners and clinics are caught engaging in commercial surrogacy and abandonment of the child born through ART or surrogacy procedures, among others. These offences have been made bailable and cognizable, which means a warrant is not required to start the investigation or arrest the person.

Read more: [Lok Sabha passes Surrogacy \(Regulation\) Bill](#)

Why is there a need to regulate surrogacy and ART?

First, Growth of ART: A market projection (by Fortune Business Insights) has noted that the size of the ART market is expected to reach US\$45 billion by 2026. Among Asian countries, India's ART market is pegged at third position.

The number of ART clinics in the country is likely more than 40,000, as per the Ministry of Health and Family Welfare. But only about 1,850 clinics and banks are either enrolled or identified with ICMR. This has led to a plethora of legal, social and ethical issues.

Second, prevent the exploitation of patients: The Acts have provisions to protect the rights of the donors, the commissioning couple and the children born out of ART and surrogacy. So, it will be impossible for outlaws to operate within the system and exploit patients to make huge profits.

Third, Creation of database: Without registration and a proper database of medical institutions and clinics providing ART services, it is impossible to regulate services like surrogacy and [Medical Termination of Pregnancy](#). Hence, both the Acts facilitate proper registration.

Fourth, the Supreme Court in the **Baby Manji Yamada vs Union of India case, 2018**, prompted the Government to pass the Act to regulate surrogacy and ART. The Court recognized the legal status of [“commercial” surrogacy](#) and ruled that the intending parent may also be a single man or homosexual couple.

Read more: [Lok Sabha passes Bill to regulate assisted reproductive technology](#)

What are the challenges associated with regulating ART and surrogacy?

Challenges to perform ART: Permitting only insurance and outlawing the sale of gametes and embryos have few challenges,

a) Out of the total cost of ₹80,000 incurred on egg donation, a gamete donor usually receives ₹40,000-50,000 as compensation. By outlawing the sale, the donors might not donate at all. **b)** Poor women may still enter into illegal transactions but will have no legal recourse in case of any medical or other complications and push the practice to the underground and black market.

Scientifically impossible provisions: The new ART law allows retrieval of not more than seven oocytes from a single donor. A woman typically produces several oocytes in a reproductive cycle, but only one oocyte matures to form an ovum. But, It's clinically impossible to ensure the number

of eggs a woman can produce. Further, eggs produced cannot be left behind in the body as it is risky.

A good donor produces 10-18 eggs. At 18 eggs, there are higher chances of pregnancy during the same IVF cycle. If the number of eggs to be retrieved are capped, there will be requirement of multiple cycles or donor stimulations, which will increase the cost for intending couples.

Increase the cost of ART: The current law restricts the gametes of one donor to be used by only one commissioning couple or woman. Two intending couples sometimes share donated gametes from the same donor to bring down the cost. Restricting the sharing will further increase the costs.

Limit ART's to large cities: The new laws mandate both clinics and banks to ensure the eligibility of intending couples and donors. Only banks are allowed to do screening of donors and retrieve eggs. There are ART clinics in small towns where maintaining banks is not feasible because of economies of scale. If screening or retrieving eggs is limited only to Banks, frozen eggs will have to be transferred to clinics from banks which is not as effective as fresh eggs.

Challenges in responsibility: The law holds medical practitioners and clinics responsible for the abandonment of children born through ART or surrogacy procedure. For instance, If a child is abandoned because of discord between the parents, the medical practitioners and clinics are responsible even though the clinic take proper consent from the couples. This will act as deterrent to clinics.

Ban on commercial surrogacy and associated issues: An entire village in Gujarat's Anand district improved its economic status using commercial surrogacy as an option. As the business of commercial surrogacy flourished, Gujarat's milk capital earned the additional title of being a "baby factory".

With the new law in place, similar hospitals and potential surrogates will have to look for new means of livelihood.

Read more: [Significance of Assisted Reproductive Technology Regulation Bill](#)

What should be done to improve ART and surrogacy in India?

Follow the international practices: Countries like the UK, South Africa, Greece and Netherlands allow only altruistic surrogacy, but the eligibility for being a surrogate mother is far relaxed in these countries. They have no such requirement for women being married, and no restrictions on the number of times women can be a surrogate.

The current ICMR guidelines, prepared after a lot of research, allow donations up to six times. So, India must follow similar norms.

Regulating commercial surrogacy would have been a better alternative than banning it. Rather than penalising surrogacy, the person providing a womb for surrogacy must be secured with a contract, ensuring proper, insurance and medical checks.

Make the Act inclusive: LGBTQIA+ and single men can also be included into the ambit. Further, the ART service providers have to form inbuilt ethics committees and mandated counselling services within their facility.

The Great Power Rivalry (China, Russia and the US) and its Impact on India – Explained, pointwise

Introduction

In the height of the Great Power rivalry, the Russian President and Chinese leader had their 38th bilateral meeting (since 2013) on February 04, 2022. The 5,000-word joint statement issued after the summit proclaimed that the “friendship between the two States has no limits, there are no ‘forbidden’ areas of cooperation”.

The German Chancellor is scheduled to meet the US President this week and he’ll be under enormous pressure to reassure the US that Germany has not gone soft on Russia and is not abandoning its NATO partners. Meanwhile, the French president is travelling to Moscow to explore the possibilities for de-escalation of the crisis in Ukraine.

The US wants to exploit the cleavages between Russia and China. Hence, the US is rebuilding and expanding its alliances. As both sides consolidate their global coalitions, it will get harder to be in the middle, especially for India.

About the summit between China and Russia

The joint statement criticised US policies six times. The summit highlighted the convergence between the two sides on a range of issues, from NATO expansion to the AUKUS alliance.

Without mentioning Ukraine, the document mentioned that China “sympathises and supports the proposals put forward by the Russian Federation on the formation of long-term legally binding security guarantees in Europe”. Similarly, Russia extended “...support for the [One-China principle](#), confirms that Taiwan is an inalienable part of China, and opposes any forms of independence of Taiwan”.

Read more: [Taiwan-China conflict and India’s stand on it](#)

Apart from that, the statement unveiled a common narrative on a host of global issues such as connectivity, cyberspace, development, democracy and human rights etc. They also agreed to cooperate on frontier issues such as artificial intelligence, international technological standards and Arctic sea lanes.

The document on India: The document did not mention the India-China border issue. The only reference to India was about the intent, “...to develop **cooperation with the ‘Russia-India-China’ format.**”

How is the Great Power rivalry taking shape?

The approach of the US

The US’s **decision to pull out of Afghanistan** was rooted in the recognition that the time is now for the US to move away from counterinsurgency in the Greater Middle East **to focus on the conflict with other great powers.**

The **US’s outreach to Russia** last year (Biden-Putin Summit in June 2021) was based on the premise that the **US could better focus on the challenges from China** in the Indo-Pacific if there was a **reasonable relationship with Russia in Europe.** To fulfil this objective, the US has

1) Revived the [Anglosphere](#) (the [AUKUS alliance with the UK and Australia](#)), **2) Elevated the [Quad](#) to the summit level, **3) Reached out to the [ASEAN](#), **4) In Europe, [Britain](#) has taken the lead in the diplomatic confrontation with Russia, **5) [France](#) is coordinating with the US in dealing with the Ukraine crisis.********

The approach of Russia and China

Both Russia and China want to leverage the united front to negotiate better terms from America. So, ever since the US's outreach, **Russia** is trying to take advantage of that proposition by raising the stakes in Europe. The present [Ukraine Crisis](#) is just a part of Russia's strategy.

China continues to challenge the US primacy in Asia.

In short, **Russia** is focused on **military means** to rewrite the European security order. On the other hand, **China** is focused on the **economical means to alter the US ties**.

The US is warning that if China backs Moscow in the Ukraine crisis, there might be major financial costs to Chinese companies.

Must Read: [Why India Needs to Balance Relations with China, Russia and US?](#)

How does the US has the upper hand in the Great Power rivalry?

Potential of the US: According to many defense experts, the US can risk a two-front challenge with Russia and China. The US has enough military resources to address aggression by both Russia and China. Further, the recent action of Russia in Ukraine might help in strengthening the [NATO alliance](#).

Read more: [NATO Summit 2021 – Countries Agreed to Step Up Defense](#)

Challenges within China-Russia relations: The Sino-Russian relationship over the last seven decades has had many twists and turns. They were allies in the 1950s, enemies in the 1960s and 1970s (erstwhile USSR), and partners again in the 2000s. Hence, there are some potential contradictions in the new united front.

Though the **Treaty of Good Neighbourliness and Friendly Cooperation in 2001** increased their cooperation, foreign policy experts hold that the China-Russia relationship is still far from being an alliance. This is because **a)** Unlike in the 1950s, ideology is not the basis of the congruence between them. The present proximity is due to Geopolitical concerns; **b)** The Crimean crisis of 2014 led Russia to court China to ward off Western pressure.

The power of the US and its allies: Seven countries among the top 10 economies — Japan, Germany, Great Britain, France, Italy, Canada, and South Korea — are allies of the US. They have been at the top of the heap for a century and more. But, Russia and China are in isolation.

India is now a strategic partner of the US and faces growing challenges from China.

Economic inequality between China and Russia: Bilateral trade between China and Russia is expected to reach \$200 billion by 2024. But, Russia's GDP of \$1.7 trillion is a tenth of China's and Russia does not figure in the top 10 world economies today. Such economic inequality might impact the stability of power equations between China and Russia.

Must read: [Recent developments in India-Russia Relations – Explained, pointwise](#)

How do Russia and China have the upper hand in the Great Power rivalry?

American vulnerabilities: According to the Russian and Chinese analysts, the chaos of American domestic politics and the continuing arguments between the US and its European partners amplify the dissonance within the West.

Europe's reliance on Russia for Energy: With the increase in gas prices in Europe because of various reasons like severe winter, post covid economy surge, many industries and food supply chains are under stress. Russia is principal supplier of Gas to Europe. A 1224 km, underwater [Nord Stream Pipeline 2](#) running from Germany to Russia across the Baltic Sea shows the European reliance on Russia.

The dilemma of Germany applies to many countries: Given Germany's large commercial stakes in Russia and China, Germany seemed unwilling to challenge them. Many of the Least developed, and developing countries are in a similar situation to Germany.

China's economic power with US Corporates: China's economic power made Wall Street bankers in the US to lobby with the US government to scale down the confrontation with China.

Must read: [What would be the implications of a Russian invasion on Ukraine for India?](#)

How did the Great Power rivalry impact India's international relations?

The return of great power rivalry coincides with **1)** Difficult phase in Indo-Chinese ties; **2)** Widening and deepening of Indo-US ties; **3)** India's relations with Russia may not have the warmth of the past but they remain crucial in a range of strategic areas.

Russia proposed the 'Russia-China-India' triangle to bring together the three major powers. But due to China's dismissive attitude and emerging China-Pakistan nexus, India started investing its diplomatic energies in rapprochement with the United States.

India's alignment with the US on security and global issues will also pose challenges to India's independence of approach and engagement in mini-lateral and plurilateral groupings such as the [BRICS](#) and the RIC, which involve Russia and China as key interlocutors.

Read more: [Its time to build BRICS better](#)

Further, India has little power to nudge Russia towards the US, nor does it have a veto over Russia's strategic partnership with China.

The upcoming meeting of the Quad foreign ministers in Australia and the planned summit of their leaders in Japan in May 2022 will give some clues to India's future navigation between the great powers.

Read more: [India in chair, UNSC adopts resolution on Taliban; Russia and China abstain](#)

What India should do in the Great Power rivalry?

India's approach will depend upon the **new dynamic between the two coalitions** as well as its **own relations with China, Russia, and the US.**

India **needs to assess the import of joint Russian-Chinese actions**. In situations like the great power game, prudence dictates assessing both words and deeds. Till then, India needs to bide its time by managing differences and balancing interests.

India **should leverage its economic potential** (6th Largest) and diverse base of foreign policy to effectively balance the relationship with the trio.

Note: Diverse Base – Actively engaging with US, European powers (France, UK), Asian powers (Japan, Korea, and Australia), etc.

Read more: [Why the Russia-West equation matters to India](#)

According to C. Raja Mohan, India would like to see Russia find accommodation with the West in Europe; India knew that stabilising the Asian balance of power will be difficult without a measure of US-Russian cooperation in Europe. But if Russia blows its ties with the West in Europe, India is unlikely to let Russia undermine its growing partnership with the US and its allies. The dynamics of this Great Power Rivalry will pose the biggest challenge to Indian diplomacy in the coming times.

Crop Diversification: Need, Advantages and Challenges – Explained, pointwise

Introduction

In a country like India, agriculture is a means of livelihood or subsistence for most farmers and not a business. At present, farmers face various bio-socio-psychological anomalies in farming. The traditional approach of low input-based extensive and diversified agricultural practices termed as 'crop diversification' could be an alternate approach to save farming and act as a counter-strategy for bio-socio-psychological anomalies.

What is Crop diversification?

Crop diversification is a strategy applied to grow more diverse crops from shrinking land resources with an increase in productivity in the same arable land.

Type of diversification	Nature of diversification	Potential benefit
Improved structural diversity	Makes crops within field more structurally diverse	Pest suppression
Genetic diversification in monoculture	Cultivation of mixture of varieties of same species in a monoculture	Disease suppression, Increased production stability
Diversify field with fodder grasses	Growing fodder grasses alongside of food/pulse/oilseed/vegetables	Pest suppression, opportunity to livestock farming
Crop rotations	Temporal diversity through crop rotations	Disease suppression, Increased production
Polyculture	Spatial and temporal diversity of crops	Insect, pest disease suppression, climate change buffering
Agro-forestry	Growing crops and trees together	Pest suppression and climate change buffering
Mixed landscapes	Development of larger-scale diversified landscapes through mixture of crops and cropping system with multiple ecosystems	Pest suppression, climate change buffering and increased production stability
Micro-watershed based diversification	Integration of crop with other farming components for year round income and employment generation, besides sustaining soil	Insect, pest and disease suppression, climate change buffering and increased production, employment and income

Source: Researchgate

This can be done in various forms such as the addition of new crop(s) as intercrop and/or predecessor or successor crops, changing numbers of the crop (multi-cropping), modified cropping system and adopting a new, integrated cropping pattern with changing agronomical practices.

The traditional pattern of agriculture in India has wider crop diversity, and is more stable and pro-nature. In the **Garhwal Himalayan region** of India, **Barahnaja** is a crop diversification system for cultivating 12 crops in a year. 'Barah anaaj' literally means '12 foodgrains' and is the traditional heritage of the area.

Must read: [How Punjab and Haryana are switching to sustainable cropping techniques to preserve groundwater?](#)

What are the array of problems faced by farmers today?

1) Today's farmers confront a series of **adversities and climatic vagaries** during agricultural production, such as erratic rainfall, stone hail, drought, flood, and so on. **2)** In addition,

challenges like **post-harvest losses, storage and unavailability of accessible proper marketing** are further aggravating the problem. **3) New array of problems** like the human-wildlife and/or human-crops conflict, forest fires, organic matter deficit soil, monoculture, plant disease and infestation, migration and the reluctance of youth towards agriculture

Read more: [\[Kurukshetra January Summary\] Smart Farming: Towards Sustainable Agriculture – Explained, pointwise](#)

Why does India need crop diversification?

For more than five decades, farmers have been using the common government-promoted Green Revolution cropping pattern — rice-wheat-rice for a longer time to enhance productivity. Unilaterally, following the same cropping pattern for a longer period of time has resulted in

- **Extraction of specific nutrients** from the soil, resulting in soil deficiency in those nutrients,
- **Declining population of microfauna in the soil:** The microfaunal population is responsible for the mobilisation and absorption of particular nutrients in the crop rhizosphere. Without microfaunal activities, the soil is lost to self-perpetuate and its ecology for crop production.
- **Reduced resource-use efficiency:** After the Green Revolution, Indian agriculture has been facing severe problems related to an increase in input cost to increase productivity. The direct increase in productivity in proportion to increase in input is limited to a certain extent and plateaus and then decreases with further increase in inputs. In India, productivity has plateaued in most regions.
- Mono-cropping patterns have **more chances to be attacked by the same types of insects and pests**, which in turn are controlled by pumping the insecticides and pesticides. This **accumulates the residue of these chemicals** in soil which pollutes the soil, crop and environment.

The introduction of diverse crops and cropping patterns help in **a) Reviving soil health, b) Increasing the population of microfauna, c) Increasing resource-use efficiency, d) Preventing change in soil's chemical and biological properties, e) Reducing the application of weedicides or herbicides, etc.**

Therefore, there is an **urgent need to change the crops and cropping pattern**, that is crop diversification.

Read more: [Government should initiate steps to make Agriculture remunerative](#)

What is the role of agroforestry in crop diversification?

The integration of trees in the cropping system, also known as **agroforestry**, plays a significant role in sustaining crop diversification. Agroforestry is a land-use system that includes trees, crops and/or livestock in a spatial and temporal manner, balancing both ecological and economic interactions of biotic and abiotic components.

Agroforestry can generate food, feed, fruits, fibre, fuel, fodder, fish, flavour, fragrance, floss, gum and resins as well as other non-wood products for food and nutritional security. It can also support livelihoods and promote productive, resilient agricultural environments in all ecologies.

Globally, different agroforestry practices have played a key role in crop diversification. In North America, for instance, farmers preferred agroforestry over agriculture to improve their economic gain and natural resource conservation.

Read more: [Pineapple Agroforestry Systems can Address Twin Challenges of Climate Change and Biodiversity Loss](#)

How is agroforestry practised in India?

Agroforestry is a part of primitive and tribal agriculture nourished with indigenous technical knowledge.

The major agroforestry practices in India include multifunctional improved fallows, home gardens, plantation crop-based mixed-species production systems, alley cropping, protein banks, shifting cultivation in different regions.

The home gardens of the southern part of India are a classic example of maintaining temporal and spatial arrangement for crop diversity, with trees resulting in sustainable productivity from the unit area.

Read more: [Year End Review: 2021- Ministry of Agriculture and Farmers Welfare](#)

What are the benefits of crop diversification?

Increases Farmers' income: Crop diversification can act as an important stress-relieving factor for the economic growth of the farming community and provide economic stability.

Increases natural biodiversity and productivity: Crop diversification can increase natural biodiversity, strengthening the ability of the agroecosystem to respond to climatic and environmental stresses.

Reduces the risk of crop failure: As different crops will respond to climate scenarios in different ways, crop diversification will significantly reduce the risk of total crop failure. Further, diversification will also help in **mitigating natural calamities**.

Ensure Food and nutritional security: Crop diversification enables farmers to grow surplus products for sale at the market. Thus facilitating both food and nutritional security.

Access to national and international markets: It can enable farmers to gain access to national and international markets with new products, food and medicinal plants.

Environmental Conservation: Adoption of crop diversification helps in the conservation of natural resources like the introduction of legumes in the rice-wheat cropping system, which has the ability to fix atmospheric Nitrogen to help sustain soil fertility.

Read more: [Our farm income and nutrition challenge amid climate change](#)

What are the challenges faced in crop diversification?

Dependence on Monsoon: Around 55% of India's Cultivable Land is Rain-fed with heavy dependence on monsoon. Hence, some crops may not be able to survive in the prevailing environmental conditions.

Fragmented land holding: It makes it difficult to use efficient modern technology on large scale, raises the cost of land boundary management, land disputes etc.

The shift from Food crops to Commercial Crops: This especially includes Cotton in the Deccan belt; and Sugarcane in the Green revolution belt and Krishna-Godavari basin.

Inadequate infrastructure: Poor basic infrastructure like rural roads, power, transport, communications etc are major impediments for diversification.

Lack of Knowledge and Training: Indian farmers are inadequately trained. Further, there is persistent and large scale illiteracy amongst farmers.

Over-use of resources like land and water resources: Crop diversification might amplify resource consumption, thereby creating a negative impact on the environment and sustainability of agriculture. For instance, Animal agriculture is the second-largest contributor to human-made Greenhouse Gas (GHG) emissions after fossil fuels.

Read more: [How do emerging technologies provide opportunity for crop diversification?](#)

How to improve crop diversification in India?

India **needs to identify crops and varieties** that may suit a range of environments and farmers' preferences. Then **a) India needs to frame adequate skill development policies** to promote the crops and varieties amongst rural livelihoods, **b) Research institutes** such as ICAR **should conduct research** on further crop diversification, **c) The government should procure crops produced** other than wheat and rice **at a Minimum Support Price.** **d) Reduce agricultural emissions** through smarter livestock handling, technology-enabled monitoring of fertilizer application and more efficient agricultural techniques.

Read more: [Why does India need MSP for other crops?](#)

Although there are challenges that need to be addressed, crop diversification provides an opportunity to double farmers income and create food and nutritional security for the nation.

[Yojana February Summary] Early Childhood Care and Education: Teach them Young – Explained, pointwise

Introduction

At present, there are about 100 million children between the ages of 3-6 years. These years are the bridge years between home and school and are critical for the physical, cognitive, socio-emotional, language, and early numeracy development. These components together comprise **Early Childhood Care and Education (ECCE)**.

These years have the 'most important influence in subsequent learning, behaviour and health'. The devastation caused by the lack of early learning for the majority of little children due to the pandemic presents one of the biggest challenge today. There is a need to expand the opportunities to the youngest children of India, as the future depends on how India's youngest children are empowered to learn and craft their own future in a fast-paced, ever-changing world.

What is Early Childhood Care and Education (ECCE)?

According to UNESCO, Early childhood is defined as the period from birth to eight years of age. It is a time of remarkable growth with the brain development at its peak.

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Early Childhood Care and Education (ECCE) is more than preparation for primary school. It aims at the holistic development of a child's social, emotional, cognitive and physical needs in order to build a solid and broad foundation for lifelong learning and wellbeing.

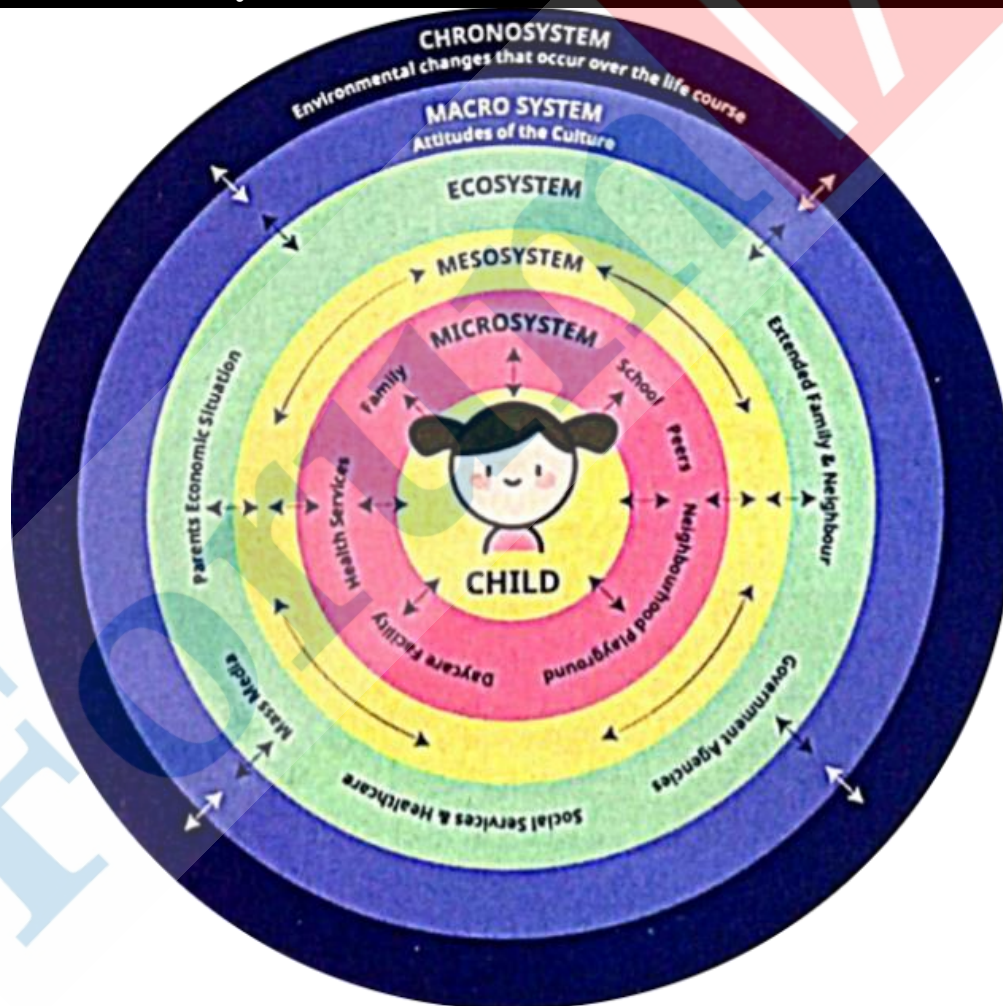
Read more: [The need to reopen anganwadis](#)

What are the three fundamental requirements for Early Childhood Care and Education?

For overall development, a child in the early years needs **(a) Care**, in the form of good health & nutrition and a safe environment; **(b) Stimulation** that fosters curiosity particularly 'planned play, adult-child interactions, child-child interactions, and opportunities for holistic development'.

Children begin to form a sense of self, but their agency is mediated by caring adults who surround them—family, teachers, *anganwadi* workers, etc. They play with their peers in the community. That's why there is an adage, **"It takes a village to raise a child."**

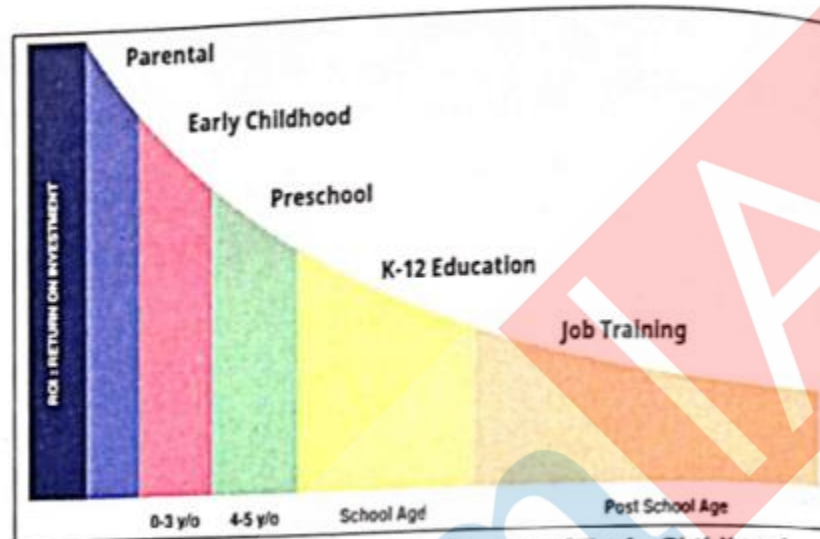
What is the need for Early Childhood Care and Education?



Source: Yojana

Foundation of future: Over the next decade, about 23-24 million births are expected per year. If India does the heavy lifting of educating this one generation, future generations will reap rich dividends.

According to [National Education Policy \(NEP\) 2020](#), “Over 85% of a child’s cumulative brain development occurs prior to the age of 6, indicating the critical importance of appropriate care and stimulation of the brain in the early years.



Heckman's Curve: Economic Impact of Early Childhood Learning (Heckman 2021)

Source: Yojana

Disproportionately Higher Returns: Nobel Laureate James Heckman strongly argues that **investing in early childhood education produces the greatest returns** in terms of human capital and ensures quality economic returns. It results in far greater returns than the same investment in schooling.

Key for optimal living: Neuroscience tells that ‘a young child’s brain develops through stimulation of the sensing pathways (e.g. seeing, hearing, touching, smelling, tasting) from early experiences’. The child’s brain in the early years is like plastic, rapidly growing, and yearning for experiences to prepare itself for the future.

The greater the number of experiences, the more neural pathways are created by neurons for optimal learning and development. Early experiences profoundly impact the prefrontal cortex part of brain which plays a vital role in executive skills like the ability to think clearly, self regulate, manage time, organise self, be goal-directed or in short – **the key ingredients for optimal living.**

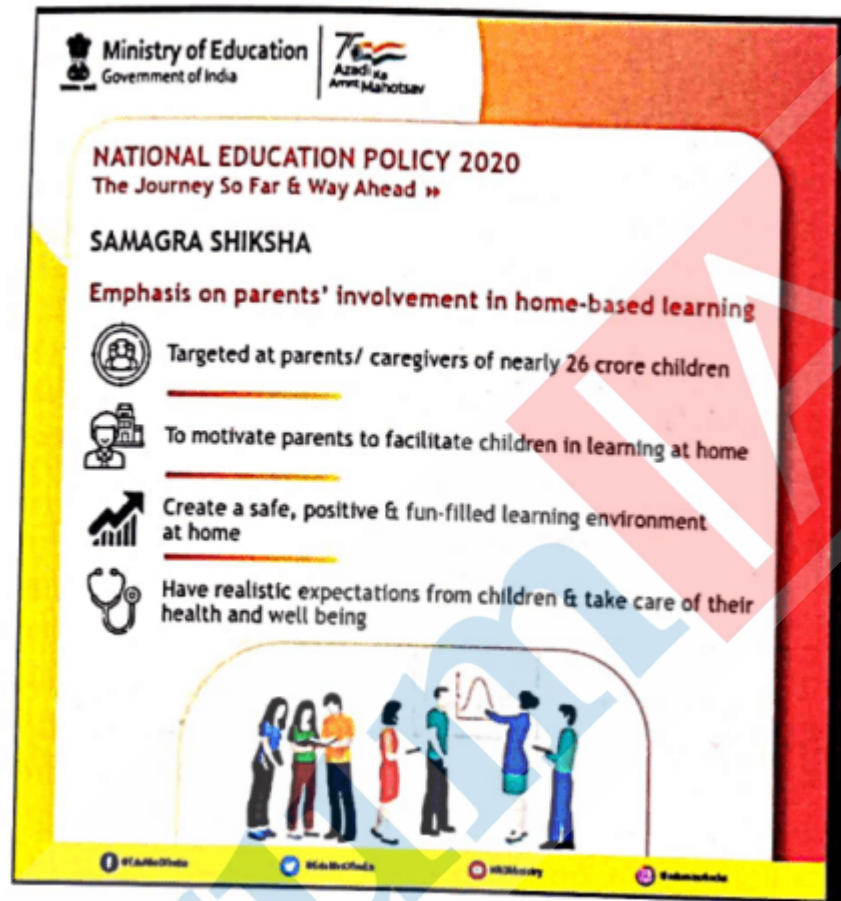
Therefore, missing this critical window of opportunity would be to **deprive the child of an opportunity for learning and a better future.**

Children learn all the time: Children learn from anything and everything they see. They learn from wherever they are, not just in special learning places like schools, *anganwadis*.

Enhance multilingualism: Researchers have shown that children pick up languages extremely quickly between the ages of 2 and 8 and that multilingualism has great cognitive benefits to young students.

Read more: [Need of Early Child Development](#)

What is the status of Early Childhood Care and Education (ECCE) in India?



Source: Yojana

The NEP 2020 has taken a big step in making **ECCE a core Policy imperative**: “Universal provisioning of quality early childhood development, care, and education must ... be achieved as soon as possible, and no later than 2030, to ensure that all students entering Grade I are school ready.”

National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat): The initiative aims to ensure every child in the country attains Foundational Literacy and Numeracy (FLN) at Grade 3 by 2026-27.

The Ministry of Education’s ‘**Guidelines for Parent Participation in Home Learning**’ mention a key strategy for early learning, that is to ‘turn everyday routines into fun playful moments for learning and brain development’. The Guidelines provide an A-Z listing of moments and activities that can be conducted e.g., the **connect with nature guideline**: Encourage children to observe the flowers, trees, plants, leaves, birds, butterflies, insects in the local environment.

Among other programmes, India has one of the largest networks of **child care or Anganwadi centres**. These centres have been set up under the Ministry of Women & Child Development’s **Integrated Child Development Services (ICDS) Scheme** (1975), which provides a range of services, from health and nutrition to pre-school non-formal education.

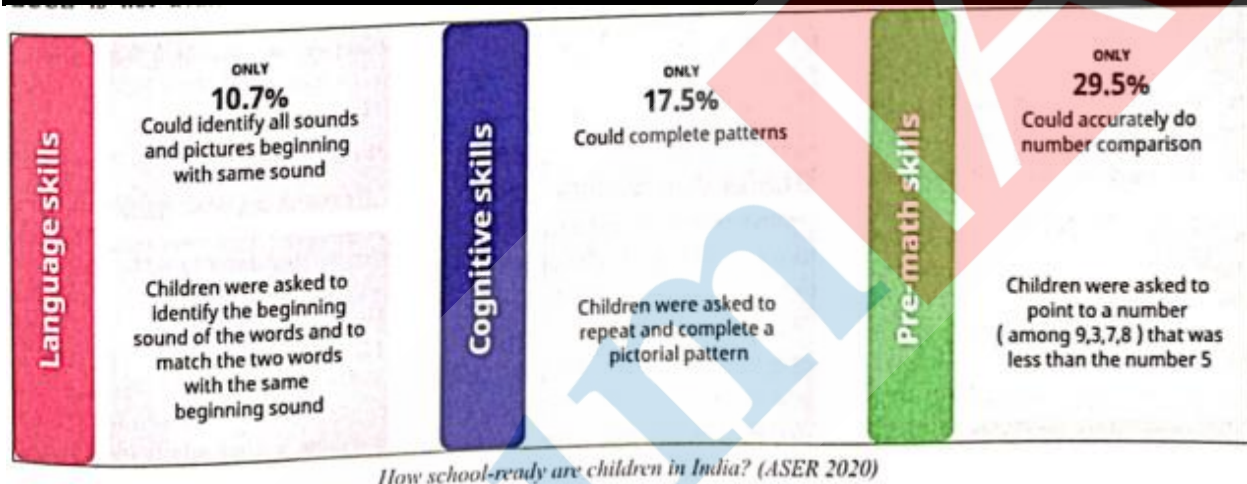
In addition, **private preschool, and daycare services** have been accessible at various price points due to increased demand particularly between 2008 and 2020.

Role of Civil society organisations: CSOs have played a significant role in conducting pioneering research, working extensively with States in building capacity for *anganwadis* and schools, spreading awareness, implementing programmes, and interventions and creating a number of practitioner resources.

These initiatives have generated a buzz in the ecosystem to create an impact in the ECCE space and maximise opportunities for every child's future in India.

Read more: [The significance of ECCE and how Anganwadis can be instrumental in delivering it](#)

What are the challenges in improving ECCE?



Source: Yojana

Children are not school ready: Of the nearly 25 million children born in India every year, about 99% enrol in school at the age of 5 or 6. However, as the report [ASER 2019: 'Early Years'](#) reveals, many children enter school without being school-ready. Only 10.7% of children aged 5 could match pictures beginning with the same sound, and only 17.5% could complete a simple pictorial pattern.

Lack of quality: Despite multiple actors and a variety of interventions and initiatives, achieving quality ECCE still remains a challenge. According to the NEP 2020, 'Presently, quality ECCE is not available to crores of young children, particularly children from socio-economically disadvantaged backgrounds'.

Neglect from parents/caregivers: The current parent/caregiver mindset is 'Early years are the days for play'. NIPUN Bharat observes that one present barrier is that the parents/caregivers do not have a role to play in education if they themselves are illiterate and their role ends at sending the child to school.

Read more: [Anganwadis should provide early childhood care and education](#)

What steps can be taken to improve ECCE?

Empower adults: There is a need to empower caring adults to engage in child's early age learning. This can be done by **(a)** Creating access to local language resources, **(b)** Aligning

learning outcomes for preschoolers with Ministry of Education guidelines, **(c)** Creating a National caregiver helpline where caring adults can get complete guidance in their local language, **(d)** Creating a platform that offers everything about “Early Learning” — from curriculums, resources, including books, toys, word activities and word games, etc.

Further, It has been found that male caregivers report higher levels of overall satisfaction compared with female caregivers’, thus opening up an opportunity for planned interventions to involve fathers/male caregivers.

Implement the strategy mentioned in NIPUN Bharat: The programme proposes that change should be brought through campaigns, events, etc., drawing on key insights from successful public programmes like Polio eradication and *Swachh Bharat* in order to make ECCE a *Jan Andolan* or People’s movement.’

Convert the technology Divide to Dividend: ASER Report 2021 mentions that during the Covid-19 lockdown the availability of smartphones has almost doubled from 2018-2021. This signals a critical shift in parental mindset about the use of smartphones for learning.

Hence, technology in the ECCE space is not child facing, but can become a powerful tool to empower and enable caring adults to raise the quality of interactions with their children in the physical world.

Turning the multilingual classroom into a resource rather than a barrier: The UNICEF-LLF ‘Guidelines for Implementation of Early Learning Programs’ mentions that including children’s local language helps to promote ‘an equitable learning environment’, ‘a strong platform for learning the school language’, and ‘higher-order work like thinking, reasoning and expression’.

So, the government can fast track the recommendations of the NEP, such as generation of textbooks, Teacher Learning Materials, and ‘enjoyable and inspirational books’ in local languages.

Make ECCE inclusive: The NEP 2020 specifically calls out that ‘children who come from families that are economically disadvantaged’ reap the ‘greatest dividends’ with early childhood education. This can be done by **(a)** Inclusion of all Socio Economically Disadvantaged Groups (SEDGs) at the three levels of access, participation, and learning outcomes; **(b)** Certain geographical areas contain significantly larger proportions of SEDGs. These areas should be declared Special Education Zones (SEZs) where all the schemes and policies are implemented to the maximum; **(c)** Specially targeting girls, who cut across all underrepresented groups; **(d)** Ensuring inclusion and equal participation of children with disabilities in ECCE.

Despite the setback due to the pandemic, with the trend of children now returning to schools, India needs to expand the opportunities to the youngest children of India. Policy intent exists, what is now required is an ecosystem to create, contribute, and leverage building blocks required to create diverse solutions and resources for the sake of ECCE.

Nuclear Fusion Technology: Evolution, Challenges and Future Potential – Explained, pointwise

Introduction

Scientists in the Joint European Torus (JET) facility, United Kingdom have said that they have achieved a new milestone in producing energy from nuclear fusion. They sustained a super-hot plasma for 5 seconds and produced 59 Mega Joules (MJ) of energy from thermonuclear fusion. This is more than double the record created in 1997 which produced 21.7 MJ of energy in 4

seconds. The record and scientific data from this is a major boost for the International Thermonuclear Experimental Reactor (ITER), the larger and more advanced version of the JET.

What is thermonuclear fusion?

THE HINDU

Energy for the 21st century

Nuclear fusion – the process by which the sun produces heat and light – could provide an almost limitless source of energy with no damage from greenhouse gases or acid rain

Hydrogen ions fuse at 10-15 million degrees C in sun's core, creating helium and releasing heat and light

CREATING NUCLEAR FUSION ON EARTH

Fusion occurs at useful rate only at temperatures of over 100m°C – created by passing huge current through gases and turning them into ionised plasma

FUEL SUPPLY: Ingredients for nuclear fusion are clean and almost inexhaustible

<p>Deuterium Hydrogen ion easily derived from water. Supplies would last indefinitely</p>	<p>Tritium Hydrogen ion created in fusion process</p>	<p>Lithium Metal needed for production of tritium – known reserves of at least 1,000 years</p>	<p>WASTE Non-polluting helium is main by-product. Small quantity of radioactive waste will be safe to handle within 50-100 years</p>
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Nuclear fusion is defined as the process of combining several small nuclei into one large nucleus with the subsequent release of huge amounts of energy. A specific case of fusion is the process by which **hydrogen atoms combine to produce helium**, and release immense energy in light and radiation.

The **most efficient fusion reaction** in the laboratory setting is between two hydrogen isotopes, deuterium (D) and tritium (T). Deuterium, also called heavy hydrogen, has a neutron and a proton in its nucleus. Tritium has two neutrons and one proton. The D-T fusion reaction produces the highest energy gain at the 'lowest' temperatures.

Nuclear fusion is possible only at extremely high temperatures and high pressure to push the hydrogen nuclei closer to fuse with each other. Hence, it is also called as 'Thermonuclear reaction or fusion'.

Read more: [Clean Energy from nuclear fusion is our Planet's best hope](#)

How nuclear fusion will occur in stars?

In a nuclear fusion reaction, lighter atoms of hydrogen fuse to produce slightly heavier atoms like helium. Ordinarily, these atoms cannot fuse. The like charges of the electron clouds surrounding the atoms would repulse and keep them at bay from coming too close.

In the core of the stars, the temperature is around 15 million Kelvins. All the electrons are ripped away at these temperatures, forming what is known as **plasma**, often referred as the fourth state of matter. Plasma is hot, charged gas made of positive ions and free-moving electrons.

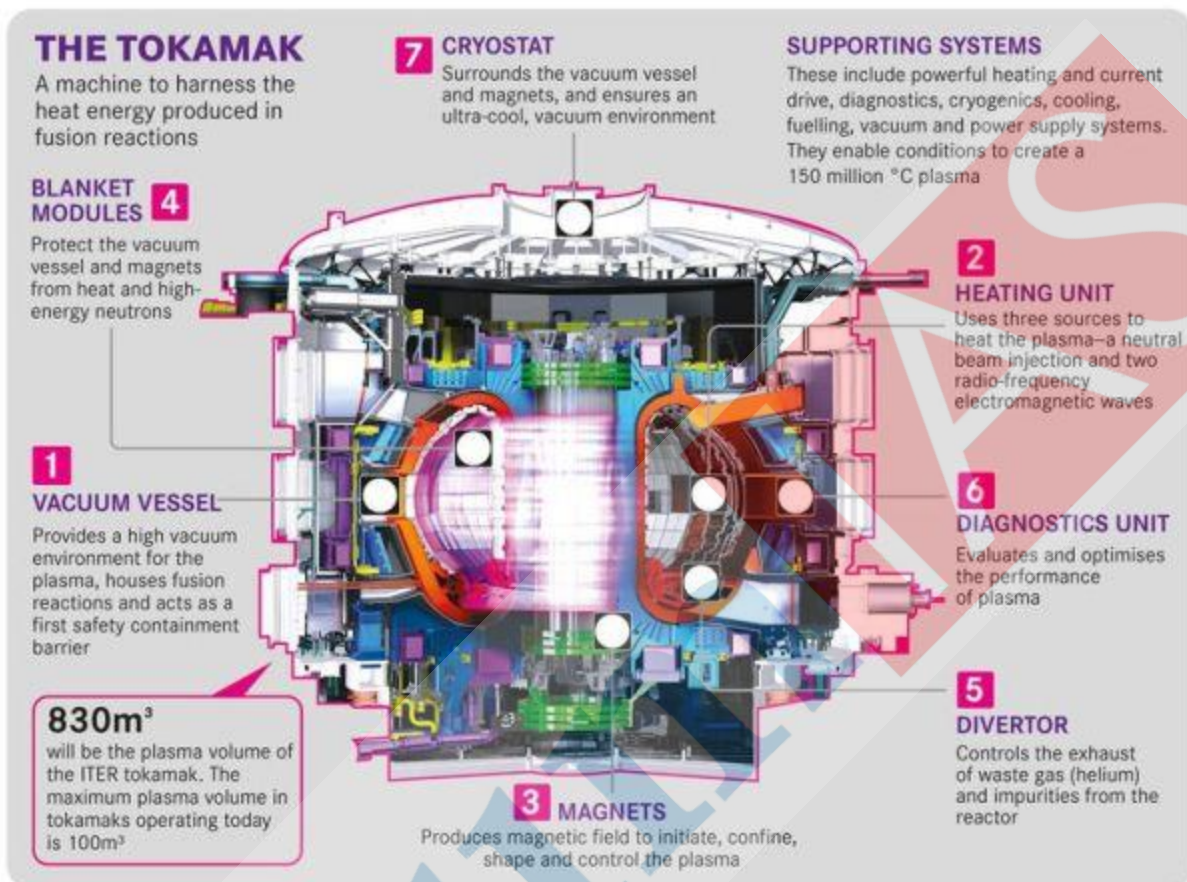
In the sizzling heat at the core of the Sun with the intense pressure and dense core, the plasma of hydrogen fuse with each other to form helium. This will spew colossal energy in the form of light and heat.

The essential condition to achieve nuclear fusion in the laboratory


Hence, three essential conditions are required to achieve nuclear fusion in a laboratory. These are **a) Extreme high temperature, b) Sufficient plasma particle density, c) Sufficient confinement time** (to hold the plasma, without expanding and containing within a defined volume). These conditions are very difficult to establish and sustain in a controlled manner and pose a big engineering challenge.

Read more: [A leap forward for fusion power](#)


What are Tokamaks?




SUPER FIGURES




1,00,000km niobium-tin (Nb3Sn) superconducting strands are necessary for ITER's toroidal field magnets



150 million °C will be the temperature in the reactor core (ten times the temperature at the sun's core)



23,000 tonnes will be the weight of the ITER machine (as heavy as three Eiffel Towers)



60 meganewtons will be the force of the 1,000-tonne electromagnet at the centre of the machine (twice the thrust of a space shuttle lift-off)

THEWEEK GRAPHICS

GRAPHICS SREEMANIKANDAN S./ RESEARCH NIRMAL JOVIAL

Source: The Week

Scientists first thought about producing energy from controlled nuclear fusion in 1940s. Both the USSR and the US stepped up their fusion research in 1950s. Soon, the Soviets came up with a viable design to kindle and sustain nuclear fusion—the **Tokamak**.

The thermonuclear fusion process is established in fusion reactors such as the Tokamaks. Although alternative designs such as **z-pinch and stellarator** have been designed and tested, tokamaks are still considered the best for achieving fusion.

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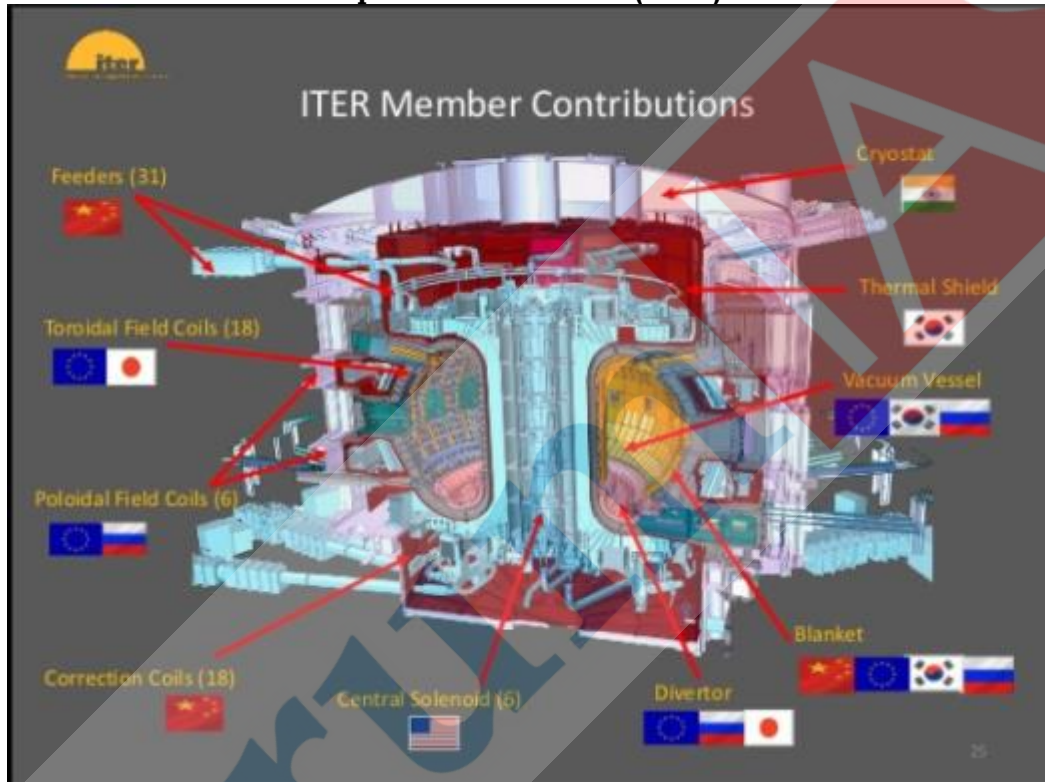
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'Tokamak' is an acronym for Russia term which translates into 'toroidal chamber with magnetic coils'. The Soviet scientists theorised that if one can create a magnetic field in the shape of a torus (doughnut shape) then the scorching plasma could be contained. The scalding of the walls of the container from the intense heat of plasma could be prevented.

Read more: [Nuclear fusion could be close enough to start blue-sky gazing](#)

What are the famous nuclear fusion projects around the world?

International Thermonuclear Experimental Reactor (ITER)



Source: Fisika

The ITER fusion reaction is based on the isotopes of hydrogen (deuterium and tritium). ITER will be the world's largest tokamak. Thirty-five countries, including India, Russia, the United States, the United Kingdom, China, European Union, are collaborating to jointly build the largest Tokamak as part of the [International Thermonuclear Experimental Reactor \(ITER\)](#). Scientists, engineers and technicians from all the 35 participating countries are working on the site and getting hands-on operational experience and training.

After years of ups and downs since March 2020, the machine assembly is underway in southern France. With the installation of the Cryostat, a device to cool the reactor, covering the assembly is slated to be completed by 2025.

The first plasma is expected to be produced at the end of 2025 or early 2026. After testing and troubleshooting, energy production might commence in 2035. The plant is expected to generate 500 MW power and consume 50 MW for its operation, resulting in a net 450 MW power generation.

China's Experimental Advanced Superconducting Tokamak (EAST) or Artificial Sun

The purpose of the EAST is to replicate the process of nuclear fusion, which is the same reaction that powers the sun. Hence, called the artificial sun. EAST is part of ITER. Recently, China's EAST sustained the plasma at 70 million degrees Celsius for 1,056 seconds in January 2022.

Read more: [China turns on 'artificial sun'](#)

What has been the progress in India with respect to Nuclear Fusion technology?

Way back in 1955, in the first 'Atoms for Peace' meeting in Geneva, Homi J. Bhabha saw a future in energy coming from thermonuclear fusion.

The Institute for Plasma Research (IPR) in Gandhinagar and the Hot Plasma Project at Saha Institute of Nuclear Physics (SINP), Kolkata, took the lead in nuclear fusion research in India. The IPR owns **two operational tokamaks** – **ADITYA** and **Steady-State Tokamak (SST)-1**.

ADITYA Tokamak: It is the first indigenously designed and built tokamak of the country. It was commissioned in 1989.

SST-1: It is under design and fabrication at the IPR. The objectives are **a)** Studying the physics of the plasma processes in tokamak under steady-state conditions, **b)** Learning technologies related to the steady-state operation of the tokamak.

How is Nuclear Fusion different from Nuclear Fission?

Nuclear Fission vs Nuclear Fusion	
A heavy nucleus breaks up to form two lighter nuclei.	Two nuclei combine to form a heavy nucleus.
It involves a chain reaction.	Chain reaction is not involved.
The heavy nucleus is bombarded with neutrons.	Light nuclei are heated to an extremely high temperature.
We have proper mechanisms to control fission reaction for generating electricity.	Proper mechanisms to control fusion reaction are yet to be developed.
Disposal of nuclear waste is a great environmental problem.	Disposal of nuclear waste is not involved.
Raw material is not easily available and is costly.	Raw material is comparatively cheap and easily available.

Source: Brainly

The advantages of nuclear fusion compared to fission include,

Do not pose danger like nuclear fission reactors: Unlike fission reactors, fusion reactors like the tokamaks do not pose the dangers of a radioactive leak. The by-products of fusion reaction is helium which is not radioactive.

Provides more energy: Fusion reactors produce four times more energy than nuclear fission reactions.

Must read: [\[Yojana October Summary\] Energy Security: Nuclear Power – Explained, pointwise](#)

What are the advantages of nuclear fusion?

Abundant energy: Gram for gram, thermonuclear power **produces four million times more energy than burning coal**. A kilogram of fusion fuel contains about 10 million times as much energy as a kilogram of coal, oil or gas e.g., if four grams of hydrogen can be fused into helium, it can light a 60-watt light bulb for over 100 years.

Sustainability: Fusion fuels are widely available and nearly inexhaustible e.g., deuterium can be distilled from all forms of water.

Non-pollutant: Nuclear fusion does not emit harmful toxins like CO₂ or other greenhouse gases. The **only waste product** from nuclear fusion **is the harmless helium** which is an inert and non-toxic gas.

No risk of meltdown: Any disturbance/malfunction will lead to the cool down of plasma within seconds and the reaction stops.

What are the challenges associated with thermonuclear fusion?

First, although there are many experimental tokamaks worldwide **none has demonstrated net energy production more than the input**. This is because lot of energy is consumed in creating high temperatures.

Second, one of the critical challenges in the Tokamak is the **sudden appearance of plasma instabilities**.

Third, triggering fusion reactions requires temperatures of 100 million degrees Celsius, and pressures of 100 billion Earth atmospheres.

Fourth, currently, the nuclear fusion process is triggered by the nuclear fission process. However, this process is very destructive, as the fission explosion also releases lethal radiation that may last for millennia.

Scientists are working hard to overcome the engineering challenges in creating and maintaining a stable nuclear fusion process. If scientists are able to overcome these challenges, nuclear fusion could meet humanity's energy needs for millions of years. Harnessing energy from controlled nuclear fusion reactions could play a vital role in mitigating climate change. The recent achievements provide an encouraging way forward in this regard.

[Kurukshestra February Summary] Ayushman Bharat: Achieving Universal Health Coverage – Explained, pointwise

Introduction

According to the [World Health Organization \(WHO\)](#), attaining the highest possible standard of health is a fundamental right of every human being. For achieving the targets of [Universal Health Coverage](#), the Government of India has implemented a flagship public health scheme – '[Ayushman Bharat](#)'.

What is Universal Health Coverage?

According to the World Health Organization, Universal Health Coverage includes the full spectrum of essential quality health services – from health promotion to prevention, treatment, rehabilitation, and palliative care across the life span. It aims to reduce morbidity and mortality by facilitating easy, economical and secure access to good quality health services to the masses.

Read more: [PM ABHIM \(Ayushman Bharat Health Infrastructure Mission\) – Explained pointwise](#)

How has the concept of Universal Health Coverage evolved at the global level?

At the global level, the **Alma-Ata Declaration (1978)** had emerged as a major milestone in the field of public health. It had identified **primary health care as the key** for attaining the goal of 'Health for All' by the year 2000 AD.

Thereafter, commitments set in the **Millennium Declaration** had led to the formulation of **Millennium Development Goals (MDGs)**. Three MDGs-4, 5 and 6 directly addressed the health-related issues.

In 2015, UN General Assembly launched the **Sustainable Development Goals (SDGs)**. Of these, the SDG-3 addresses health directly while the SDG-2, SDG-6 and SDG-5 address health indirectly.

The **40th anniversary of Alma-Ata Declaration** (Alma-Ata at 40: from 1978 – 2018) came at a time when Primary Health Care is once again receiving well-deserved attention.

However, the **Astana Declaration (2018)** is a shift from Alma-Ata (Primary Health Care) towards Universal Health Coverage (UHC) for attaining sustainable development goals.

To meet the SDGs targets, **nations** across the globe are trying to achieve UHC with a **focus on its three major pillars**: (1) **Service Delivery**, (2) **Health Financing**, (3) **Governance**.

Read more: [Ayushman Bharat Digital Health Mission – Explained, pointwise](#)

The concept of universal health coverage in India

Table 1: Time Trends in Salient Health Indicators (1950-2021)

Year	Life Expectancy at Birth (years)	Fertility rate	Birth rate	Infant Mortality rate	All-cause Mortality rate
1950	35.21	5.91	44.18	189.63	28.16
1960	41.13	5.89	42.07	161.74	22.48
1970	47.41	5.6	39.23	141.82	17.45
1980	53.47	4.86	36.22	114.74	13.5
1990	57.66	4.09	31.82	88.79	11.01
2000	62.28	3.35	26.64	66.73	8.80
2010	66.43	2.64	21.51	45.31	7.59
2020	69.73	2.2	17.59	29.85	7.31
2021	69.96	2.18	17.38	28.77	7.34

Source: <https://population.un.org/wpp/Download/Standard/Population/>

Note: Life Expectancy at Birth (in years) refers to the average number of years a newborn is expected to live under the prevailing mortality rates; Fertility rate is the average number of live children born per woman; Birth rate is number of children born per thousand persons in a year; Infant Mortality Rate refers to the number of children dying under one year of age per 1,000 live births; All-cause Mortality rate refers to the number of persons dying from all causes of death per thousand persons in a year.

Source: Kurukshehra

The concept of universal health coverage (UHC) is not new to India, it was first proposed by the **Bhore Committee** in **1946** highlighting that all individuals and communities should receive the health services they need without any economic stress. The Committee recommended the integration of preventive and curative services at all levels and laid out a plan for strengthening primary healthcare.

During the post-independence to pre-pandemic period, India was making good progress in terms of scaling up its national health and nutrition services.

The COVID-19 has tested the strengths and weaknesses of the Indian health sector including **risk identification, risk assessment and risk alertness** which are important components of a surveillance system.

A comparison of the data pertaining to some salient health indicators over a period of 70 years (1950-2021) indicates India is moving towards UHC. For instance, **(1)** The life expectancy at birth has nearly doubled; **(2)** There is a reduction in the fertility rate (by ~2.7 folds), birth rate (by >2.5 folds), infant mortality (by ~6.6 folds) and all-cause mortality rate (by ~3.8 folds).

Despite the favourable trends, a lot more is yet to be achieved to improve the health status of our people.

About the Ayushman Bharat Scheme

This scheme was formulated and implemented based on the recommendations of the National Health Policy. It is envisaged that this initiative **will help India in achieving the Sustainable Development Goals (SDGs)**; its mandate is “**leave no one behind.**” The scheme is under the Ministry of Health and Family Welfare.

Aim: **(1)** To holistically address the healthcare system-covering prevention, promotion and ambulatory care at all levels – primary, secondary and tertiary, **(2)** To enhance the quality, efficiency and efficacy of healthcare delivery.

Ayushman Bharat has two major components namely: **(1) [Health and Wellness Centres \(HWCs\)](#)** and **(2) [Pradhan Mantri Jan Arogya Yojana \(PM-JAY\)](#)**.

Read more: [Critical evaluation of ayushman bharat](#)

About HWCs

Under this, 1.5 lakh health care centres will be established. The major objective of HWCs would be to provide Comprehensive Primary Health Care (CPHC) closer to the residence/vicinity of the people.

These centres would particularly aim at providing maternal and child health services, along with the delivery of health services for major non-communicable diseases. These centres will also provide free essential drugs and diagnostic services.

Read more: [Govt launches school health programme under Ayushman Bharat](#)

About PM- Jan Arogya Yojana (PM-JAY)

The scheme aims to provide health cover of Rs. 5 lakhs per family per year for secondary and tertiary care hospitalization to over 10.74 crores of poor and vulnerable families (approximately 50 crore beneficiaries) from the bottom 40% of the Indian population. It is the largest government-funded health assurance scheme in the world.

Salient components covered under PM-JAY - the health assurance scheme:

- **Medical examination, treatment and consultation**
- **Pre-hospitalisation**
- **Medicine and medical consumables**
- **Non-intensive and intensive care services**
- **Diagnostic and laboratory investigations**
- **Medical implantation services (where necessary)**
- **Accommodation benefits and Food services**
- **Complications arising during treatment**
- **Post-hospitalisation follow-up care up to 15 days**

Source: Kuruksheetra

National Health Authority is the apex body responsible for implementing 'PM-JAY'.

Salient features of the scheme are

-The annual benefits of Rs. 5 Lakh can be used by any one or more members of the family covering up to all the members.

-There is no capping on family size or age of the family members. In addition, pre-existing diseases are also covered from the very first day.

-It covers up to 3 days of pre-hospitalisation and 15 days post-hospitalisation expenses incurred on diagnostics and medicines.

-Public hospitals are reimbursed for the healthcare services at par with the private hospitals.

Read more: [Union Minister launches Arogya Dhara 2.0 to increase reach of Ayushman Bharat](#)

What have been the achievements of the Ayushman Bharat scheme since its inception?

Figure 4: Salient Milestones of PM-JAY (from 1st February 2018 to 10th August 2020)



Source: Kurukshetra

Since its inception, Ayushman Bharat has been trying to successfully meet its objectives of ensuring comprehensive coverage for catastrophic illnesses, reduce catastrophic out-of-pocket expenditure, improving access to hospitalisation/health care, reducing unmet needs, and converging various health insurance schemes across the different states of India.

By December 2021, more than **17.3 crore Ayushman Cards** had been issued to the beneficiaries. Data indicate that of these, more than 2.6 crore individuals were admitted to the hospitals and 8.3 lakh COVID-19 cases have been treated successfully. Ayushman Bharat has also facilitated the successful implementation of the COVID-19 vaccination drive.

Several notable achievements have been observed in various Indian states/Union Territories like Jammu & Kashmir, Madhya Pradesh to name a few e.g., the Government of J&K has decided to extend the benefits of AB PMJAY to the entire population through 100% government funding mechanism and launched the **Universal Health Coverage (AB PM-JAY SEHAT)**.

Read more: [Govt to rationalise rates of health benefit packages under Ayushman Bharat](#)

What further steps are required to provide UHC in India?

There is a need to **develop a need-specific Framework of Action** keeping in mind the following aspects:

Finance: (a) Increase domestic resource mobilisation and budget re-allocation at frequent intervals, (b) Facilitate efficient and judicious time-bound utilisation of financial resources.

Health Services: (a) Prioritise health services which are of most significances to reducing mortality and morbidity, (b) Invest in pre-service medical and paramedical education, (c) Engage in multi-sectoral partnerships to address determinants of health.

Equity: (a) Scale-up safety net approaches including vouchers and conditional cash-transfers which directly or indirectly support good health and well being, (b) Expand service delivery for marginalised and vulnerable groups.

Preparedness: (a) Prepare and regularly improve National preparedness plans especially for natural disasters, (b) Enhance State level and international collaborations to prepare for and respond to public health emergencies such as epidemics/pandemics.

Governance: (a) Ensure that all citizens have access to data and information on UHC, (b) Strengthen national institutions and organisations through capacity building, (c) Ensure workable effective mechanisms for inter-sectoral dialogue and work.

Read more: [“Apart from curing, Ayushman Bharat Scheme is empowering several Indians.”](#)

Further efforts should be made to provide the benefits of the Ayushman Bharat scheme to the entire population through 100% Government funding like in Jammu and Kashmir. This will make India strong by ensuring good health of people irrespective of their class, creed, gender and socio-economic status.

Drone Imports Ban and Boosting Indigenous Drone Manufacturing – Explained, pointwise

Introduction

The Directorate General of Foreign Trade, under the Ministry of Commerce and Industry, has issued an order prohibiting drone imports in certain forms. Along with the **production-linked incentive scheme for drones and drone components**, the move is aimed to boost indigenous drone manufacturing, which is seen as a sector that is set to witness rapid growth this decade.

About the drone import ban in India

The ban applies to drones in Completely-Built-Up (CBU), Semi-knocked-down (SKD) or Completely-Knocked-down (CKD) forms. In the knocked-down form, the components of drones are imported separately and the final assembly is done after import.

The import of drones will be allowed for: (a) Government entities; (b) Educational institutions recognised by Central or State governments; (c) Government recognised R&D entities; (d) Drone manufacturers for R&D purposes as well as for defence and security purposes.

The order also says that the **import of drone components is “free”**, implying that no permission is needed from the DGFT allowing local manufacturers to import parts like diodes, chips, motors, lithium-ion batteries etc. This is expected to increase indigenous drone manufacturing.

Read more: [The lethal use of drones can't carry on as a global free-for-all](#)

Why has the Government decided to ban imports of drones?

Growth of drone manufacturing in India: The Government estimates that the drones and drone components manufacturing industry will attract investments of over Rs 50 billion over the next three years. The annual sales turnover of the drone manufacturing industry is expected to grow multifold from Rs 600 million in 2020-21 to over Rs 9 billion in FY 2023-24. During this period, the drone manufacturing industry is expected to generate over 10,000 direct jobs.

Cumulatively, the **drone services industry** is expected to grow to over Rs 300 billion in the next three years and generate over 500,000 jobs

Status of drone imports: At present, India imports drones from various countries e.g., **(a) For defence needs**, India imports drones from **Israel and the U.S.**, **(b) Consumer drones** such as those used in wedding photography come from **China**; **(c) Drones for light shows** are imported from **China** as well as **Russia**.

At present, more than 90% of the Indian drone market is flooded by imported drones, the vast majority of them are Chinese which is a cause of concern for the Government.

Read more: [How new drone guidelines can give wings to drone startups?](#)

What are the advantages associated with banning drone imports?

Boost indigenous drone manufacturing: Most drone manufacturers in India assemble imported components in India, and there is little manufacturing. Banning drone imports will benefit the local production and allow Indian drone startups to compete with one another.

Also, allowing imports of drone components will enhance the understanding and control of the product. Over a period of time, this will enable indigenisation.

Enhance data security: The vast majority of drone imports are from China. There is a risk of data and security breaches with the use of Chinese systems. With an import ban, the Indian manufacturers will have control of the IP, design and software. Hence, the ban will address the data security concerns associated with drones.

Read more: [Union Minister says, start-up 'Botlab Dynamics' to light up the sky with 1000 Drones Light Show at 'Beating the Retreat Ceremony'](#)

What are the challenges associated with banning drone imports?

Firstly, India does not have the manufacturing capacity to cut dependence on imports. So, banning drone imports will lead to a lot of disruption in terms of business and derail a lot of well-laid plans as 90% of the service providers in India are using imported drones.

Secondly, many foreign brands specially make drones for agricultural use. This would have helped with the Government's Kisan drone initiatives. These too will now be restricted.

Thirdly, India does not have a supply chain for the local manufacturing of drones. Hence, schemes like PLI Scheme for drones and drone components to encourage local manufacturing will not have much impact.

Fourthly, it will increase the cost burden on companies, as imported drones are cheaper than locally assembled ones.

Fifthly, banning drone imports would be bad news for drone enthusiasts, who import them for photography, video and other leisurely activities.

Read more: [How 'kisan drones' will help in the development of agriculture sector](#)

What are the measures taken to promote indigenous drone manufacturing?

Liberalised Drone Rules, 2021: The Government brought out liberalised Drone Rules in 2021. This reduced the number of forms to be filled to seek authorisation from 25 to 5. Apart from that, the rules; **(a)** Dispensed with the need for security clearance before any registration or issuance of the licence, **(b)** R&D entities have been provided blanket exemption from all kinds of permissions; **(c)** Removed the restrictions on foreign-owned companies registered in India.

Drone Certification Scheme: The scheme was notified under Rule 7 of the liberalised Drone Rules, 2021. The scheme will help in simpler, faster and transparent type-certification of drones.

Single window Digital Sky Platform: It is the first-of-its-kind national unmanned traffic management (UTM) platform that implements **"No Permission, No Takeoff" (NPNT)**. Users will be required to do a one-time registration of their drones, pilots and owners.

Production-linked incentive scheme for drones and drone components: The scheme aims to make India a "global drone hub by 2030". It has allocated ₹120 crores for a period of three years, under which it will offer an incentive of 20% of the value addition made by a manufacturer of drones or drone components or drone-related IT products.

Apart from giving a boost to local manufacturers, the scheme will also encourage foreign manufacturers to set up assembly lines in India.

Promote drone use in agriculture: The guidelines of Sub-Mission on Agricultural Mechanization (SMAM) have been amended: **(a)** To provide a grant up to 100% of the cost of agriculture drone or Rs.10 lakhs, whichever is less; **(b)** Graduates establishing Custom Hiring Centre (CHC) will be eligible for subsidy up to 50% of the cost of the drone and associated equipment up to Rs 5 lakhs, etc.

Read more: [Push for promotion of drones through start-ups](#)

What are the applications of drones in different domains?

Defence and Security: Surveillance, situational analysis, crime control, VVIP security, combat operations, communication in remote areas and counter-drone solutions.

Health sector: Delivery of medicines, collection of samples from remote or epidemic/pandemic-affected areas.

Environment: Anti-poaching actions, monitoring of forests and wildlife, pollution assessment, and evidence gathering.

Agriculture: Crop and soil health monitoring, anti-locust work, insurance claim survey, creation of Land Records and property rights.

Disaster management: Incidence response especially in fire accidents and disasters like Earth Quake, etc, rescue and recover missions, Monitoring and assessing damages, etc.

Law Enforcement: surveillance of large crowds and ensuring public safety, monitoring criminal and illegal activities.

Apart from that, drones offer high-quality videography of events in difficult-to-reach-places at a fraction of the cost, facilitate low altitude shooting without noise, and avert the risk of human accidents.

What should be done to promote indigenous drone manufacturing?

Provide support to local manufacturers: Though the first step has been taken by prohibiting the import of CBU and CKD drones, support should be provided to the local manufacturers **at the component level** in order to develop the full ecosystem.

Apart from that, the government has to: **(a) Incentivise garage startups, micros, and small industries;** **(b) Provide access to high-quality and economically priced drone hardware;** **(c) Create a regulatory mechanism that favours and promotes Indian software** to be used for all drone operations across sectors. This will make Indian software companies to become the Microsoft of the drone industry.

Increase Investments: India needs to invest in drone systems and counter-drone technologies to detect and track threats, especially around critical assets.

Create awareness about the pros and cons of drone use: The usage of drones is fairly a new concept in India. Hence, a lot of safety regulations have to be made mandatory for both manufacturers and users. Accidents can lead to negative campaigns, which eventually damage the industry. Government should create awareness about the pros and cons of drone use.

To realise the aim of becoming the world's drone hub, India must establish the ecosystem, compete on a global scale with high-quality products and create indigenous software.

Geospatial Sector in India – Explained, pointwise

Introduction

Geospatial Technology is a term used to describe a range of modern tools like the Geographic Information System (**GIS**), Remote Sensing (**RS**) and Global Positioning System (**GPS**). Geospatial

technology enables us to acquire data that is referenced to the earth and use the data for analysis, modeling, simulations and visualization. Geospatial technology has moved from being a niche to mainline technology driving public-private partnerships for large infrastructure programmes. The use of Geospatial technologies can help ensure timely completion of projects through tracking, monitoring and managing performance as per plans.

It's been almost a year since the Government of India announced the Geospatial Data Guidelines in 2021 that deregulated the geospatial sector. Through the guidelines the Government provided much needed push for the sector but there remain some bottlenecks that should be duly addressed in order to ensure a more decentralised and democratic adoption.

What is Geospatial Technology?

Geospatial technology uses tools like GIS, GPS and Remote Sensing for geographic mapping and analysis. These tools **capture spatial information about objects, events and phenomena** (indexed to their geographical location on earth, geotag). The location data may be Static or Dynamic. Static location data include position of a road, an earthquake event or malnutrition among children in a particular region while dynamic location include data related to a moving vehicle or pedestrian, the spread of an infectious disease etc.

The technology may be used to create **intelligent maps** to help **identify spatial patterns** in large volumes of data. The technology facilitates decision making based on the importance and priority of scarce resources. Geospatial technology has become an indispensable part of everyday life with its use in tracking everything from transportation to personal fitness to changes on the surface of earth.

What is the Current Status of Geospatial Sector in India?

According to **India Geospatial Artha Report 2021**, the Indian geospatial economy is currently valued at Rs 38,972 crore and employs approximately 4.7 lakh people. The past decade has seen an increase in the use of geo-spatial data in daily life with various apps. These include food delivery apps like Swiggy or Zomato, e-commerce like Amazon, cab hailing apps like Ola and Uber and many weather apps. However, the sector is still **dominated by the Government** as well as government-run agencies such as the Survey of India (SOI).

What is the significance of Geospatial Sector?

Economic Growth: The sector has potential to grow to Rs **63,100 crore at 12.8% by the end of 2025** as per India Geospatial Artha Report 2021.

Employment Generation: Private Companies like Amazon, Zomato etc. use this technology to smoothly conduct their delivery operations which supports livelihood generation. Further the estimated human resource size of the sector is expected to reach 9.5 lakh by 2025.

National Security: The Government of India started investing heavily in geospatial technologies after the Kargil war. The war highlighted the adverse effects of dependence on geospatial data sourced from foreign countries.

Implementation of Schemes: The flagship schemes of the Government like **the Gati Shakti program** can be smoothly implemented using geospatial technology. The scheme involves huge

investments in construction of about 25,000 Kms of highways, multimodal transport, and modernization of land records.

Boost to Make in India: Focusing on the sector will allow Indian companies to develop indigenous apps like an Indian version of google maps.

Land Record Management: Using this technology, the data related large number of landholdings can be appropriately tagged and digitized. It will not only help in **better targeting** but would also **reduce the quantum of land disputes in courts**. Barring Karnataka, the records are not updated in other states.

Crisis Management: Technology and logistics were perfectly supported through the use of geospatial technology during the Covid 19 vaccination drive.

What steps have been taken by the Government for the sector?

Guidelines for Geospatial Data, 2021: The guidelines were released by the Ministry of Science and Technology in February 2021. The guidelines **deregulated existing protocol and liberalized the sector** to a more competitive field. The guidelines eliminated the requirement of permissions as well as scrutiny, even for security concerns for Indian Companies.

Companies now can self-attest, conforming to government guidelines without actually having to be monitored by a government agency.

Read More: [DST announce liberalization of “Geospatial data and Mapping” Policy](#)

Geospatial Energy Map of India: It has been developed by **NITI Aayog** in collaboration with Indian Space Research Organization (**ISRO**). It aims to provide a comprehensive view of energy production and distribution in the country.

It will be useful in planning and making investment decisions. It will also aid in disaster management using available energy assets.

Union Budget 2022-23: Government would support the **use of Kisan drones** for land assessment, digitization of land records and spraying insecticides and nutrients.

Read More: [How ‘kisan drones’ will help in the development of agriculture sector](#)

Yuktdhara Portal: The Ministry of Rural Development has launched a new geospatial planning portal named ‘Yuktdhara’. It will serve as **a repository of assets** (geotags) created under the various National Rural Development Programmes, such as MGNREGA. It will integrate a wide variety of thematic layers, multi-temporal high-resolution earth observation data with the analysis tool.

What changes have happened after the deregulation?

The experts are projecting the geospatial market to reach around **1 lakh-crore by the year 2029** with 13% Compound Annual Growth Rate (CAGR). The geospatial sector **is seeing new interest from more investors** e.g., the initial public offering (IPO) of MapmyIndia got over subscribed (154 times) and listed at 53% premium. The other noticeable activity was the launching of a city mapping programme by Genesys International in India.

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What are the challenges impairing progress of Geospatial Sector?

Absence of a sizeable geospatial market: There is low demand for geospatial services and products on a scale linked to India's potential and size. This is mainly due to the lack of awareness among potential users in government and private sector.

Human Resource Deficit: There is dearth of skilled manpower to collect, store and analyze the data across the entire geospatial pyramid. Unlike the West, India lacks a strata of core professionals who understand geospatial technology end-to-end.

Lack of data availability and sharing constraints: The unavailability of foundation data, especially at high-resolution, is also a constraint. Further the lack of clarity on data sharing and collaboration prevents co-creation and asset maximization.

Lack of Tailor made solutions: Barring a few cases, there are still no ready-to-use solutions especially built to solve the problems of India.

What should be done to promote the Geospatial Technology Sector in India?

First and foremost is the need to publish the entire policy document and raise awareness among Government and private users. The data available with government departments should be unlocked, and data sharing should be encouraged and facilitated.

Second, there is a need to establish a geo-portal to **make all public-funded data accessible through data as a service model**. It is important to inculcate the culture of data sharing, collaboration and co-creation. Further there is a need to develop a **geospatial data cloud locally** and facilitate a solution as service.

Third, there is a need to generate foundation data across India. This should include the **Indian national digital elevation model (InDEM)**, data layers for cities, and data of natural resources.

Fourth, India should **start a bachelor's programme in geospatial** in the Indian Institutes of Technology and the National Institutes of Technology. Besides these, there should be a dedicated geospatial university. These programmes will propel research and development efforts which are crucial for the development of technologies and solutions locally.

Fifth, Digital India should prioritize **the creation of 3D national digital twins** of our environments (water, road, rail, cities & rural) to track and monitor ailing structures and utilities.

Sixth, National organizations like **SoI and ISRO should be entrusted with** the responsibility of regulation and the projects related to the **nation's security and scientific significance**. These organizations should not compete with entrepreneurs for government business as the latter remains in a disadvantageous position.

Seventh, the **draft National Geospatial Policy (NGP)** and the Indian Satellite Navigation Policy (SATNAV Policy) should be duly finalized to augment the sector.

Conclusion:

Geospatial will be a crucial technology that will drive growth ambitions of the country – providing employment and also aiding the new-age ecosystem by providing location intelligence at your fingertips. More and more sectors such as agriculture, environment protection, power, water, transportation, health etc. desire the technology in order to truly realize their potential.

Research and Development in India: Status, Challenges and Recommendations – Explained, pointwise

Introduction

According to UNESCO's data, the global expenditure on Research and Development (R&D) has crossed US \$1.7 trillion. This signifies the importance of R&D in modern economies. Countries are now placing extensive focus on their R&D programs in order to gain a competitive edge in the fast changing technology driven world.

India too wants to leverage this domain but experts have expressed caution over the meagre allocations towards the sector. It is significantly behind its global peers and hence may lose a substantial share of the innovation pie in the long run. This warrants an increase in R&D expenditure and other supportive steps that would be discussed in the article.

What is the current status of spending on Research and Development?

The Gross domestic expenditure on R&D (**GERD**) as the percentage of gross domestic product (GDP) is **around 0.7%**. The percentage expenditure for the last couple of years has shown a downward trend.

According to a report (2020) prepared by the Department of Science and Technology (DST); of the funding allocated to R&D in 2017-18, 61.4% of the amount went to DRDO (31.6%), Departments of Space (19%) and Atomic Energy (10.8%) together. Approximately 37% was allocated to the general R&D agencies like the ICAR, CSIR, DST, DBT, ICMR etc. while only 0.9% was allocated to R&D in electronics, IT and renewable energy.

The Government has focused on two things in the Budget 2022-23:

First, defense **R&D will be opened for industry, start-ups, and academia** with 25% of the defense budget earmarked for such activities.

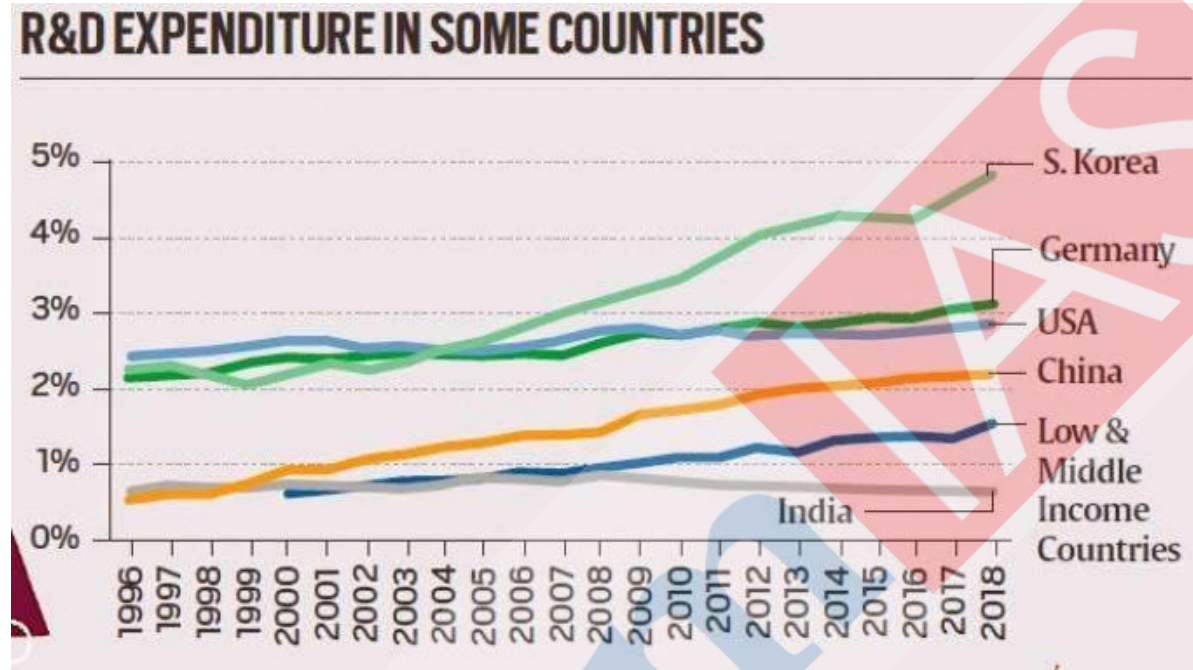
Second, **identification of sunrise opportunities** in areas like artificial intelligence, geospatial systems and drones, semiconductors, space, genomics and pharmaceuticals, green energy, and clean mobility systems.

How does India perform in comparison to other countries?

India is a **low spender** (only 0.66% of the GDP) in comparison to the developed countries and emerging economic powers of East Asia. In fact, India's expenditure on R&D is lower than Low and Middle Income Countries.

In most of the developed capitalist countries, defense-related R&D is undertaken by the private sector. In India, this **expenditure is mostly borne by public funding**.

The magnitude and quantum of Joint Public-Private research projects is much higher in developed countries in comparison to India.



Source: Indian Express

What is the need to focus on R&D?

Productivity and Economic Growth: Technology is the main driver of growth in today's digital economies. R&D helps in development of new technologies, or improving the efficiency of existing processes (like enhancing resource use efficiency). Enhancing spending in R&D would improve research outcomes and contribute to economic growth.

Low Cost Indigenous solutions: R&D is desired in order to create tailor made solutions for the Indian population; such solutions that are cost effective and easily accessible to the poor sections like the **Jaipur Foot**.

Improve Learning Outcomes: The best teaching and learning process at the higher education level occurs in environments where there is a strong culture of research and knowledge creation. This is testified from the experience of the world's best universities like the Harvard, Stanford, Oxford etc.

Reducing Imports: India spends considerable money for importing **high end technologies from countries like the U.S, South Korea etc.** which raises the import bill and increases fiscal deficit.

Tackling Emergencies: The Covid 19 pandemic was duly tackled by India as it already had a strong base of low cost vaccine manufacturing. This enabled it to partner with countries and

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companies for arranging vaccinations for the Indian population. A case in point is **creation of Covishield vaccine** by the Serum Institute in partnership with Oxford University and Astrazeneca company. In addition, **Covaxin was developed indigenously** in India through the partnership of ICMR and National Institute of Virology with Bharat Biotech, a private sector corporation.

National Security: Relying on foreign countries for domestic R&D needs increases vulnerability of modern digital economies to cyber attacks and espionage. Experts have raised **caution against the use of semiconductor chips** imported from China. Further **India is still one of the largest defense importers** of the world as per data of Stockholm International Peace Research Institute.

Climate Change: The Sixth Report of IPCC has cautioned the world towards the approaching climate change. This warrants creating eco friendly technologies to reduce GHG emissions like building low cost solar panels, EVs, lithium batteries etc.

What steps have been taken by the Government to boost R&D?

National Research Foundation: The National Education Policy (NEP) 2020 suggested the establishment of a National Research Foundation (NRF). The aim is to fund competitive, peer-reviewed grant proposals from the universities, colleges, and institutions of higher learning.

IMPRINT initiative: IMPacting Research, INnovation and Technology (IMPRINT) scheme is a pan-IIT and IISc joint collaboration. The scheme was launched in 2015. It aims to provide solutions to the most relevant engineering challenges by translating knowledge into viable technology in 10 selected technology domains.

Atal Tinkering Labs: It is an initiative of the Niti Aayog under Atal Innovation Mission. It aims to foster curiosity, creativity and imagination in young minds; and inculcate skills such as design mindset, computational thinking, adaptive learning etc.

IPR Laws: The WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is the most comprehensive multilateral agreement on intellectual property (IP). India is a signatory to TRIPS and has enacted its domestic IPR laws to foster IPR creation and curtail its violation.

What are the impediments faced by the R&D sector?

Low Funding: The funding is less than 1% of the GDP. Further there are no extra provisions for R&D in the sunrise sectors.

Delay in Disbursal: The finance minister in her budget speech of 2021 proposed an allocation of Rs 50,000 crore to NRF over the next five years. However in the actual budget, no such provision was made.

High Dependence on Grants: Many universities depend on the DST, DBT, ICMR and CSIR under their extramural support system. This dependency creates a situation where quality of research at doctoral level gets hampered when less funding is provided to the public institutions.

Lack of Skilled Personnel: At present, there is a lack of adequate expertise in many emerging areas. Further the best talent of our country migrate to foreign countries as they don't get the requisite ecosystem for doing good quality research resulting in **brain drain**.

IPR violation: This acts as a very big impediment to create something unique and innovative. Further poor IPR compliance discourages foreign investment flow into the field of R&D.

Outdated Curriculum and Pedagogy: The curriculum in many universities is still focused on rote learning and oriented to getting jobs only. There is less emphasis on R&D due to which many universities are unable to duly utilize the research grant provided to them.

Fiscal Deficit: The country witnessed a deficit of 9.3% in 2020-21 primarily due to the Covid 19 impact. Such a high deficit impedes higher allocation towards the R&D sector as main focus is placed on reducing the fiscal deficit.

Poor Private Sector Participation: Private sector contributes 37% of the total R&D expenditure in the nation. It is way less than the average 68% expenditure by private players in developed countries.

What steps can be taken to boost R&D?

First, the budgetary allocation towards R&D should be enhanced. **Economic Survey 2020-21 suggested** that the country needs to increase its GERD from around 0.7% to over **2%** of its GDP.

With increased allocations, joint R&D projects between public institutions and start-ups/industries can also be supported.

Second, the country should focus on **proper implementation of schemes like Make in India and Atma Nirbhar Bharat**. Higher spending in R&D by the private sector will happen as the manufacturing sector expands in the country.

Third, the amount of Rs 50,000 crore committed to establish NRF could be immediately used to plug the deficits in the grants provided to the autonomous universities and Institutions by CSIR, DST and other agencies.

Fourth, a **virtual platform** that will hold all the information on the projects granted with public funding could be developed for **better information sharing**.

Fifth, in the next five years, **around 5,000 students/scientists need to be trained** at the doctoral and postdoctoral level in the best laboratories of the world using India's soft power. Simultaneously, post-doctoral work in India should be encouraged by providing **better remuneration** to the young scientists.

Sixth, the **National IPR policy of 2016** should be duly adhered in order to gain investor confidence and attract more investment in R&D.

Seventh, the Government should promote Government-Industry-Academia partnership to support the R&D Ecosystem in India. The development of Covaxin is an excellent example and

the learning experience can be transferred to other sectors like green technologies, defense and electronics manufacturing etc.

Conclusion

To move from stagnation in R&D to a more dynamic ecosystem would require action on many fronts including greater allocation of funds. Science and technology departments will have to work out how to fast-track decision-making, information sharing, and allow investigators more flexibility in utilizing the funds. This would be the desired path to breed a culture of curiosity and inquisitiveness in the country.

[Kurukshehra February Summary] Rural Healthcare Infrastructure – Explained, pointwise

Introduction

Rural India is the backbone of our nation as more than 60% of India's population resides in rural regions. The high proportion places a greater responsibility on the Government towards the health and wellbeing of the rural population. Considering this, the Government has started several schemes and is promoting numerous awareness programs to ensure health for all. There has been a special focus on rural India where the Government has pitched for providing several health facilities especially for women and children.

However the rural healthcare infrastructure has been constrained by budgetary limits, shortage of staff and other shortcomings that has made healthcare an inaccessible for many people. This warrants a more proactive approach towards the sector (rather than restricting only to reactive measures) as shown by the Government during the pandemic .

How is the rural healthcare structured in India?

The healthcare facilities in rural areas under the National Rural Health Mission (as part of the National Health Mission) have been developed as **a three-tier system**.

It includes Sub-Centres (SCs), Primary Health Centres (PHC) and Community Health Centres (CHC).

An SC being the first contact point, has one male and one female healthcare worker and a health advisor is entrusted with the task of supervising six SCs. One SC is envisaged to serve up to 5,000 people.

PHC units consist of a medical officer supported by 14 paramedical staff and are equipped with six patient beds and other basic facilities. The PHCs have been envisaged to provide an integrated curative and preventive health care with an emphasis on preventive and promotive aspects of health care. A PHC is equipped to serve up 20,000-30,000 people.

CHCs have four medical specialists (surgeon, physician, gynecologist and pediatrician) supported by 21 paramedical staff and are equipped with 30 patient beds with one Operation Theatre, X-ray, labour room and laboratory facilities. A CHC covers approximately 80,000-120,000 people.

An existing CHC (or a District Hospital, Sub-divisional Hospital) can be declared a fully operational First Referral Unit (FRU) only if it is equipped to provide **round-the-clock services for emergency obstetric and New Born Care**, in addition to all emergencies that any hospital is required to provide.

Table 2: Population norm for public health facilities through Indian Public Health Standards (IPHS) in rural areas

S. No.	Public Health Facilities	Plain Area	Hilly/Tribal/Difficult Area
1	SC	5000	3000
2	PHC	30000	20000
3	Non FRU CHC	1,20000	80000
4	FRU CHC	500000	NA

Source: Rural Health Statistics, 2019-20

Source: Kurukshetra

What is the current status of rural healthcare infrastructure?

As per Rural Health Statistics 2019-20, there are 1,55,404 Rural Sub-Centres including 18,610 Ayushman Bharat Health and Wellness Centres – Sub Centres (AB-HWC-SCs).

Further, there are 24,918 Rural Primary Health Centres (PHCs) including 16,635 AB-HWC-PHCs and 5,183 Community Health Centres (CHCs).

The number of **ANMs (auxiliary nurse midwife)** at Sub Centres and PHCs has increased from 1,33,194 in 2005 to 2,12,593 in 2020.

Similarly, the number of allopathic doctors at PHCs has increased from 20,308 in 2005 to 28,516 in 2020, which is about 40.4% increase.

What is the need for robust rural healthcare infrastructure?

Disease Control and Prevention: Properly equipped healthcare facilities in a proximate range would ensure that common health concerns, such as viral diseases, maternal issues, child health problems etc. are addressed in an expedited manner.

Targeted Population: With more than 60% of India's population living in rural areas, the importance of rural healthcare facilities cannot be overemphasised.

Reduce Health Expenditure: Currently the **out-of-pocket expenditure in India is more than 60%** which places a heavy burden on the rural poor. Robust health infrastructure will help in treating the disease at the primary level. It will **save a lot of money and resources** that are further spent at secondary and tertiary level health care.

Greater Vulnerability: The region comprises people who are not as affluent and resilient as their urban counterparts. Their ability to **absorb extreme situations** like a pandemic is very less due to inadequate financial cushions.

Economic Stability: The rural sector provides human resources for sectors such as retail, construction, manufacturing, hospitality, education and transportation.

Further, continued consumption expenditure by the rural population creates demand for multiple goods and boosts the overall economy. However none of this would be possible if individuals are not fit and healthy.

What steps have been taken by the Government to augment rural healthcare infrastructure?

Ayushman Bharat: Under this, the existing Sub-Centres (SCs) and Primary Health Centres (PHCs) are being transformed into 1.5 lakh AB-HWCs (Ayushman Bharat-Health and Wellness Centers). They would deliver 12 packages of Comprehensive Primary Health Care (CPHC) that includes preventive, promotive, curative, palliative and rehabilitative services.

Ayushman Bharat Health Infrastructure Mission: It envisages increased investments in public health and other health reforms to provide better access to health in rural areas. It has an outlay of Rs. 64,180 crore to be spent till 2025-26.

National Rural Health Mission: Under the NRHM, support is provided to the States for ensuring a range of free services related to maternal health, child health, adolescent health, family planning, universal immunization etc..

One of the key components of the Mission is to provide every village in the country with a **trained female community health activist** – ASHA (Accredited Social Health Activist). An ASHA acts as the **interface between the community and the public health system in rural India**.

Other major initiatives supported under NRHM include Janani Shishu Suraksha Karyakram (JSSK), Rashtriya Bal Swasthya Karyakram (RBSK) etc.

[Read More: Steps taken to meet the challenges of healthcare in India](#)

What support was given during the Pandemic?

COVID-19 Health System Preparedness and Emergency Response Package: It is aimed at containment and management of the pandemic providing for augmentation of infrastructure, oxygen supported beds, isolation beds, ICUs and Human Resources, supply of drugs, etc..

Phase 2 package amounting to Rs. 23,123 crore is under implementation from July 1, 2021 to March 31, 2022.

Support in Kind: The Ministry of Health and Family Welfare helped the states by procuring and distributing oxygen cylinders, Truenat COVID Test Cartridges, X-pert COVID cartridges, N-95 masks, PPE kits, Remdesivir and ventilators etc.

Special Oxygen Support: For making oxygen available in healthcare facilities, the government has sanctioned 1573 Pressure Swing Adsorption Oxygen generation plants, including in rural areas. Out of these, as of 20th July, 2021, 316 plants have been commissioned.

What are the factors hindering delivery of rural healthcare?

Shortage of infrastructure: The country doesn't have the requisite number of SCs, PHCs and CHCs as per the demand. Due to the shortage, an average facility is serving much more people than it is equipped to serve.

Table 1: Average rural population covered by health facility (based on the mid-year population as on July 1, 2020)

Health Facility	Norm	Average Rural Population Covered
Sub Centre	300 – 5000	5729
Primary Health Centre (PHC)	20000 – 30000	35730
Community Health Centre (CHC)	80000 – 120000	171779

Source: Rural Health Statistics, 2019-20

Source: Kurukshetra Magazine

Lack of personnel: As per Rural Health Statistics 2019-20, there is a shortfall of 76.1% specialists at the CHCs as compared to the requirement for existing CHCs. Altogether, 56,581 positions of doctors and other health staff are vacant in rural areas. Further, the shortage of trained doctors has led to **a proliferation of unqualified quacks.**

Budgetary Constraints: India spends way too less on health in comparison to other developed nations like the U.S and Japan. The Economic Survey 2020-21 has strongly recommended an increase in public spending on healthcare services from 1% to 2.5-3%.

Awareness Deficit: The rural masses are not well aware of the facilities provided in the nearby centres. Further there lack of education inhibits outcomes of national programs as seen by development of **vaccine hesitancy during the COVID-19**.

Centralized Control: The centralized structure of administration and operation inhibited the degree of positive health outcomes in many rural regions during the pandemic.

What more steps can be taken?

First and foremost, the **number of healthcare facilities should be enhanced**. There is a need for at least two sub-centres in one village panchayat as the first point of access for patients.

Further, every two village panchayats can share one PHC and around four to six village panchayats should have one well-equipped CHC at their disposal.

Second, a **permanent toll-free number** can be established for healthcare whereby for every zone the CHC can be the point of operation. CHCs can have rapid response teams to address urgent concerns and requirements received over the toll-free calls.

Third, CHCs could also facilitate the creation of **mobile medical units (MMUs)** to facilitate health care in remote areas, especially tribal villages. MMUs can have paramedics supported by one or two nursing staff equipped with basic machinery and general medicines.

Fourth, **several stakeholders within the village community** like Accredited Social Health Activists (ASHA) Workers, Primary School Teachers, Religious/Spiritual Leaders etc. should be mobilized. They can help in disseminating essential information about the disease, precautions to be observed, and its cure.

Fifth, **village-level resource mapping exercises** can be conducted with the support of the above stakeholders. They can pass on the information to block development officers (BDOs).

BDOs would identify and monitor health issues of each gram panchayat within their jurisdiction and report it to the sub-division officers (SDOs). This would **make the process more decentralized**.

Sixth, states should adopt **flexible norms for engaging healthcare workers for public health facilities** by various mechanisms like 'contracting in' and 'contracting out' of specialist services under NHM. They can offer negotiable salaries to attract specialists including flexibility in strategies such as "You quote, we pay".

[Read More: How to fix India's creaking health infrastructure?](#)

There is a need to focus on improving rural healthcare infrastructure in order to ensure that Indian citizens living even in the most remote places have access to effective healthcare. This would be in synchronization with the commitments that India possesses as a **welfare state** and also help in achievement of **SDG 3 i.e Health for All**.

Culture of Freebies in India: Issues and Recommendations – Explained, pointwise

Introduction

The elections for the Legislative Assemblies are underway in 5 States and every party is promising a plethora of freebies to lure the voters. Political parties consider it a convenient way to take an edge over competitors and try to gain emotional control over the minds of the electorate. The culture of freebies has been continuing since independence and no party or candidate has completely distanced itself from it.

In this article we will try to analyze the reasons behind the rising prevalence of freebie culture in India. Further, a light would be thrown on arguments in support and against the freebie culture along with some recommendations to manage it in the long run.

What is the meaning of Freebies?

The literal meaning of freebie is something that is given free of charge or cost. Political parties are outdoing each other in promising free electricity and water supply, laptops, cycles, electronic appliances, etc. These are called 'freebies' and characterized as fiscally imprudent.

Freebies during the Pandemic: Governments (both Union and states) as well as the RBI took several measures to mitigate pandemic effects. This included expansion of the food security scheme for two full years, cash transfer schemes for farmers, expansion of the jobs scheme etc.

What are the reasons for the rise of freebie culture during elections?

Criminalization of Politics: According to the Association for Democratic Reforms (ADR), 233 MPs in the current Lok Sabha are facing criminal charges, up from 187 in 2014. These candidates often resort to distribution of liquor, money, goods etc. to lure voters.

[Read More: Liquor, cash, freebies swing votes: ADR survey](#)

Myopic opinion of masses: It is believed that Indian masses vote and react more on short term freebies and less on long term policies. This encourages parties to offer more freebies.

Historical Baggage: Since the independence, parties have been promising some form of freebies to attract voters. Even if a new party comes to power, then also it can't rationalize or outrightly abolish the freebie commitments of prior governments e.g., Several State Governments have been forced to continue power and irrigation subsidies due to political pressure. Governments fear that discontinuance will antagonize their voter base.

Concealment of Actual performance: Freebies are often used as a means to conceal the poor performance of incumbent Government on economic and social parameters. They provide an opportunity to alter the voter's mindset from real issues to short term gains.

Domino Effect: The rise in coalition era politics since the 1990s has witnessed a rise of new political parties. These small and new parties have to offer more freebies than larger parties to lure the voters. Moreover the increase in competition among the parties to seek the votes, each party tries to outdo the others in terms of populist promises.

What are the arguments in support of Freebies?

Welfare State: The Constitution places an obligation on the State to take proactive measures for the welfare of poor and downtrodden. For instance, **Art. 39(b)** calls for resource distribution for achieving common good.

Glaring Inequality in the society: In India there is a wide inequality between the rich and the poor in terms of income and wealth. The **OXFAM report 2021** showed that the income of 84% of households in the country declined in 2021, but at the same time the number of Indian billionaires grew from 102 to 142.

Sacrifices by the marginalized section: They gave up land for cities, roads, factories and dams. However, they largely became landless workers and slum dwellers. **Their kinship, culture and lives got disrupted.** Several economists argue that the gains of development have hardly trickled down commensurately, especially after 1991. The cost of freebies offered is a fraction of what the poor lose.

The World Bank recognised in the 1980s that the prevalent policies marginalize the poor and a 'safety net' (freebies) is needed.

Cushion during Emergencies: COVID-19 has been one of the biggest health emergencies in the world in over a century. Such extreme events warrant state support to prevent chaos and disruption in society e.g., the **free COVID-19 vaccination** for every individual in India led to a more prudent management of the pandemic.

Economic Push: They help increase the demand that prevents the rate of growth from declining further. Free education and health are anyway justified because they are cases of 'merit wants' and increase productivity of labor.

Incentives for the rich: The well-off and businesses get 'freebies' that are euphemistically called 'incentives'. Since 2006, the Union Budget estimates these to be between Rs 4-6 lakh crore each year. If the well-off who don't really need freebies can get so much, why can't the marginalized (especially women and youth) get a fraction of it?

Social Stability: Freebies enable the government to release the growing discontent in the marginalized section. They keep a lid on societal disruption which would be far more expensive.

What are the arguments against Freebies?

Undermines the spirit of Democracy: This is the primary concern as many people tend to vote for parties based on the free incentives offered by them. They fail to judge them on their performance and don't vote as per merit. Even the Supreme Court has observed that freebies shake the root of free and fair elections.

FREE IS NOT FAIR

<ul style="list-style-type: none"> ➤ SC says distribution of freebies influences all people. 'It shakes the root of free and fair elections to a large degree' 	<p>policies & economic and political priorities. Say voters decide on basis of promises in manifesto</p>
<ul style="list-style-type: none"> ➤ Petition relates to sop war in TN. Against DMK's promise of free colour TVs in 2006, AIADMK in 2011 announced free mixers, laptops & gold mangalsutras 	<ul style="list-style-type: none"> ➤ Court says assemblies, Parliament should decide on legitimacy of freebies



Fall in Productivity: Freebies create a feeling in masses that they can live with minimal effort. This decreases their productivity towards work e.g., a trend has been created that whoever avail loan from banks does not repay them, expecting a **waiver of loans during the election**. This gives rise to moral hazard and an incentive to default.

Fiscal Stress: Freebies generally form part of revenue expenditure. Excess allocation towards them leaves little to spend on capital expenditure that is a sine qua non for achieving long-term growth.

A case in point is **Tamil Nadu which has been rolling out freebies in keeping with poll promises** and ended up with unsustainable fiscal conditions.

Discourages the honest taxpayer: It creates a sense of discontentment in the mind of an honest taxpayer whose money is used to fund the freebie expenditure. This feeling is more dominant especially when the State is unable to improve the public services due to freebie commitments.

Sectoral Collapse: The populist measures of loan waiver have put significant pressure on the banking sector. Similarly rising power subsidies have enhanced pressures on discoms who are failing to sustain themselves.

[Read More: Free power at a big price](#)

Wastage of Resources: Promises of free water and electricity creates a severe stress on the water table and leads to over exploitation as seen in states of Punjab and Haryana. NITI Aayog has cautioned that **21 major cities of India are on the verge of running out of groundwater** in a few years.

What steps can be undertaken going forward?

First, there should be **strengthening of internal party democracy** so that promises of development and not freebies are made in the elections. This would also reduce the magnitude of criminalization of politics.

Second, the **Election Commission** should be given **greater powers like power to deregister a political party, power of contempt** etc. This would curtail distribution of liquor and other goods during elections and ensure expenditure as per the desired limit.

Third, the Government should use the money spent on freebies towards **job creation and infrastructure development** as **advised by Madras HC in 2021**. This will lead to social upliftment and progression of the State.

Fourth, the focus should now be tilted on **improving public expenditure efficiency**. This requires **focusing on outcomes and not merely outlays**. One good example is the distribution of LPG subsidy through direct benefit transfer (DBT) which led to a decline in the subsidy bill.

[Read More: What India@75 needs: Education and skills, rather than freebies](#)

Fifth, the Government should also focus on **decreasing the magnitude of black economy**. Black Economy erodes the fiscal pool of government and leads to suboptimal spending thereby enhancing the tilt towards freebies to lure voters.

Sixth, in the long run, **eradication of unnecessary freebie culture requires an attitudinal change** in the masses. This warrants delivery of robust moral education at all levels which can be done by properly implementing the **New Education Policy, 2020**.

India has experienced the politics of freebies for a long time and the outcome of those policies has been sub-optimal, inefficient, and unsustainable. Therefore rather than doling out money, focus should be on spending it efficiently. It is high time the discourse on improving public expenditure efficiency should take center stage while discussing the role of fiscal policy in India. However, until that is achieved, reliance on acceptable freebies like health, education etc. can't be completely stopped.

India-UAE Bilateral Relationship – Explained, pointwise

Introduction

India and the United Arab Emirates (UAE) enjoy strong bonds of friendship based on age-old cultural, religious and economic ties between the two nations. India-UAE together have built a considerable degree of mutual trust that has enabled them to take their relationship to greater heights.

They have added another feather to their cap by signing a new Free Trade Agreement { Comprehensive Economic Partnership Agreement (CEPA)} on 18th February, 2022 in a virtual summit. The Agreement is expected to provide both the nations a greater flexibility and opportunity to leverage each other's strengths. The signing of agreement also holds a symbolic significance as India is currently celebrating 75 years of its Independence as Azadi Ka Amrit Mahotsav and UAE is celebrating the 50th anniversary of its foundation.

How has the India-UAE relationship evolved over time?

The relationship flourished after the accession of H.H. Sheikh Zayed Bin Sultan Al Nahyan as the Ruler of Abu Dhabi in 1966 and **subsequently with the creation of the UAE Federation in 1971**. Since then, both sides have been actively collaborating with each other.

In recent years, bilateral relations between India and the UAE have strengthened in all areas, and both sides have embarked upon a comprehensive strategic partnership. The Prime Minister visited UAE in 2015, 2018 and 2019 while the Crown Prince of Abu Dhabi visited India in 2016 and 2017.

Ministerial visits between the two sides have also continued, including three visits of External Affairs Minister and a visit of Commerce and Industry Minister to UAE in 2021. What are the key outcomes of the India-UAE Virtual Summit?

Advancing the India – UAE Comprehensive Strategic Partnership New Frontiers, New Milestones



Economic Partnership

- India-UAE Comprehensive Economic Partnership Agreement (CEPA) signed
- Establish a dedicated India Mart in Jebel Ali Free Zone
- Establish specialized industrial advanced technology zones in the Emirate of Abu Dhabi for Indian investors



Emerging Technologies

- Expand cooperation on critical technologies
- Promote e-businesses & e-payment solutions
- Collaborate to promote start-ups



Energy Partnership

- Identify new collaboration opportunities to support India's energy requirements, including new energies



Climate Action and Renewables

- Work together to create a just & equitable transition to a low-carbon future
- Establish a joint Hydrogen Task Force to help scale up technologies, with a special focus on Green Hydrogen



Defence and Security

- Enhance maritime cooperation
- Fight against Extremism, Terrorism & Cross-border terrorism

Advancing the India – UAE Comprehensive Strategic Partnership New Frontiers, New Milestones



Cultural Cooperation

- Setup India-UAE Cultural Council



Education Cooperation

- Establish an Indian Institute of Technology in UAE



Health Cooperation

- Collaborate in Research, Production & Development of reliable supply chains for vaccines
- Enhance investments by UAE entities in India's health sector



Skills Cooperation

- Develop a mutually agreed professional standards and skills framework



Food Security

- Strengthening infrastructure & dedicated logistic services connecting farms to ports to final destinations in UAE

Highlights of the Joint India-UAE Vision Statement

A major achievement in the bilateral relations is the signing of the Comprehensive Economic Partnership Agreement (CEPA). Negotiations for the CEPA were launched in September 2021 and has culminated with the signing of the Agreement in February 2022.

The Agreement will provide significant benefits to Indian and UAE businesses, including enhanced market access and reduced tariffs. It is set to **reduce tariffs for 80% of goods** and give **zero duty access to 90% of India's exports to the UAE**. It is expected that the CEPA will

lead to an increase in bilateral trade from the current US \$60 billion to US \$100 billion in the next 5 years.

India-UAE have also signed several Memorandum of Understandings (MoUs) which include: **(a)** MoU on India-UAE Joint Commemorative Stamp; **(b)** MoU between APEDA, DP World and Al Dahra for Cooperation in Food Corridor; **(c)** MoU between the International Financial Services Centers Authority (IFSCA), GIFT City and the Abu Dhabi Global Market Financial Services Regulatory Authority (FSRA) on cooperation in financial projects and services.

What have been the major achievements of the India-UAE relationship?

Economic: The India-UAE total trade merchandise has been valued at US \$52.76 billion for the first nine months of the fiscal year 2021-22. This has made **the UAE India's third largest trading partner.**

The UAE's investment in India is estimated to be around US \$11.67 billion, which makes it **the ninth biggest investor** in India.

Many Indian companies have set up manufacturing units either as joint ventures or in Special Economic Zones for cement, building materials, textiles, engineering products, consumer electronics, etc.

Strategic Partnerships: India, Israel, the United Arab Emirates and the United States have decided to launch **a new quadrilateral economic forum.**

Read More: [India and the new Quad in West Asia](#)

It builds on ongoing cooperation between the U.S., Israel and the UAE after the **Abraham Accords** and India. The forum is described as an international forum for economic cooperation.

Energy Cooperation: The UAE is one of India's key energy providers and remains committed to meeting India's growing energy demand. India imported US \$10.9 billion worth of crude oil from the UAE in 2019-20. The UAE is the first international partner to invest by way of crude oil in India's **Strategic Petroleum Reserves** Program.

The countries are also collaborating in the renewable energy sector as seen by mutual participation in the **International Solar alliance.**

Pandemic Management: Both sides had **agreed on an Air Bubble Arrangement in 2020** during the pandemic which has enabled the movement of people between two countries despite the challenges posed by COVID-19. The UAE was among the first countries to receive India's indigenous Covaxin in February 2021.

Indian Diaspora: UAE hosts a large Indian community which numbers close to 3.5 million. The nation has been a consistent provider of jobs to Indian people.

Sports: The collaboration among the two countries in the domain of sports is also rising. This is testified by the occurrence of IPL 2020 and the last T20 world cup in UAE. Although both the events were earlier scheduled to be conducted in India.

What is the significance of India-UAE relationship?

Remittances to India: India had received over US \$83 billion in remittances in 2020 which was one of the highest in the world. Amongst this, a substantial portion came from the UAE. The remittances from the UAE in the first half of 2020 accounted for US \$21 billion.

Strategic considerations: The UAE, due to its strategic location, has emerged as an important economic center in the world and is also a major re-export hub for India. Further good relations with the UAE are imperative to **counter China's influence** in the Middle-east region.

Security of the region: The **Middle-east region** is still witnessing a lot of conflicts in Syria, Iraq etc. Good relations with UAE are imperative to give India a core place in discussion surrounding the Middle-east region. Further UAE can support India in strengthening the **security of the Indian ocean region** especially along the western coast of Somalia that is prone to piracy. India-UAE have been collaborating closely to counter terrorism as well.

Gateway to Africa: Engagement with the UAE will pave the way for India to leverage UAE's easy access to the African market and its various trade partners. This can help India to become a part of the supply chain especially in handlooms, handicrafts, textiles and pharma.

Entry into regional groupings: UAE commands a significant respect in regional groupings like [OIC](#) (Organization of Islamic Cooperation). An improvement in relation will open India's door for an OIC membership.

India's Soft Power: Good relations with UAE is a sine qua non for enhancing India's Soft power in the Middle-east region. A recent progression of it was witnessed in 2021 when both Abu Dhabi and Dubai celebrated Diwali.

What are the challenges to the India-UAE Relationship?

Non Tariff Barriers (NTBs): Non-Tariff Measures (NTMs) have mostly been covered by Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT). The UAE has 451 SPS notifications and 534 TBT notifications. The SPS notifications are mainly related to live poultry, meat, and processed food. In addition, the TBT notifications are mainly related to fish, food additives, meat, rubber, electrical machinery, etc. These measures hamper India's exports to UAE.

China's Cheque Book Diplomacy: China has deep pockets and offers money at very low interest rates which crowds out Indian companies from UAE and Middle-east region.

Arab- Iran Conflict: The differences between Iran and the Arab world hinders India's engagement in the Middle-east region. Balancing the relationship sometimes results in reluctance of some strategic agreements.

Kafala System: The inhuman conditions imposed by the Kafala system on immigrants sometimes create differences between the two countries.

What steps should be taken to further enhance the India-UAE relationship?

First, the countries should focus on **completing their MOUs** (memorandum of understanding) in order to take their relationship to the next level.

Second, they should establish more strategic dialogues between them like the 2+2 dialogue. Currently India has a **2+2 dialogue** with U.S, Russia etc. but not with UAE.

Third, future relationships should be nurtured by the **spirit of mutual sacrifice to attain common gain**. For instance, in the current agreement, India gave tariff concessions to the UAE on gold, and they eliminated tariffs on jewellery.

Fourth, in recent years, **the UAE**, through its 'Vision 2021', has sought to **diversify its economy** and reduce its dependency on oil. This provides an opportunity for India to engage with it in new areas of renewable energy, start-ups, fintech, etc.

Fifth, India-UAE must try to bring more **transparency and predictability in the use of NTBs** so that their compliance becomes less cumbersome. There should be regular information sharing on labeling, licensing, permit requirements, import monitoring and surveillance requirements.

Sixth, India should **actively engage with the UAE** to reform the Kafala system. A reference of Qatar can be given who has promised to remove the inhuman conditions of the system.

Both nations should come together to further engage with each other, bilaterally as well as on multi-lateral fora, based on mutual trust and confidence. Their future discourse should be guided by the rules of international law and focus on making the world a better place to live keeping in mind their respective national interest.

Corporate Governance in India – Explained, pointwise

Introduction

Corporate Governance involves a set of comprehensive rules to deal with the affairs of a corporation. A lapse in corporate governance is detrimental to the interests of all stakeholders including the investors, the shareholders, the general public and the Government. A lapse in Corporate Governance was observed recently in the conduct of Chitra Ramkrishna, former Managing Director of National Stock Exchange (NSE) from 2013-2016. The agencies scrutinizing the affairs at India's largest stock exchange include the Ministry of Corporate Affairs, Income Tax Department and the Securities and Exchange Board of India (SEBI). They have now widened the probe against Chitra Ramkrishna to include her frequent visits to tax havens and governance lapses during her tenure as the managing director of the NSE.

What is the meaning of Corporate Governance?

Sir Adrian Cadbury had defined (in the Cadbury Committee Report) Corporate Governance as the system by which companies are directed and controlled. It is the system of rules, practices and processes by which a firm is governed.

It essentially involves **balancing the interests of a company's many stakeholders**, such as shareholders, management, customers, suppliers, financiers, government and the community. Corporate Governance **ensures that the business of a firm is conducted in an ethical manner** in compliance with the laws, rules and regulations and the industry best practices.

A company's corporate governance is important to investors since it shows a company's direction and business integrity. Good corporate governance helps companies build trust with investors and the community.

The Cadbury Committee had defined the roles to ensure proper Governance. Boards of Directors are responsible for the governance of their companies. The shareholders' role in governance is to appoint the Directors and the auditors. The responsibilities of the Directors include **(a)** Setting the company's strategic aims; **(b)** Providing the leadership to put them into effect; **(c)** Supervising the management of the business; **(d)** Reporting to shareholders on their stewardship.

What is the structure of Corporate Governance in India?

The Companies Acts 2013: The Act provides a formal structure for corporate governance by providing disclosures, reporting, transparency and compliance norms. It has provisions concerning Independent Directors, Board Constitution, General meetings, Board meetings, Board processes, Related Party Transactions, Audit Committees, etc.

Other Legislations: The Competition Act 2002; the Foreign Exchange Management Act, 1999; the Industries (Development and Regulation) Act, 1951; and other legislations also have a bearing on the corporate governance principles.

SEBI (Securities and Exchange Board of India) Guidelines: SEBI ensures the protection of investors and has mandated the companies to adhere to the best practices mentioned in various guidelines released and amended from time to time.

Accounting Standards issued by the ICAI: Institute of Chartered Accountants of India is an autonomous body that issues accounting standards. The disclosure of financial statements is also made mandatory by the ICAI backed by the Companies Act 2013.

Standard Listing Agreement of Stock Exchanges: They apply to the companies whose shares are listed on various stock exchanges. The Agreement contains elaborate provisions related to audits, disclosure of information, publication of Annual Statements etc.

Secretarial Standards Issued by the ICSI: Institute of Company Secretaries of India issues standards on 'Meetings of the board of Directors', General Meetings', etc.

What is the recent controversy related to the NSE?

The events at India's largest stock exchange surfaced in February 2022 with the ongoing SEBI probe.

The probe found that Ms. Ramkrishna shared the exchange's **confidential information with an unidentified spiritual guru during her tenure as MD and CEO of NSE** from April 2013 to

December 2016. She hired a little-known public sector executive, Anand Subramanian, first as an adviser and then promoted him as chief operating officer (COO) at the guru's behest.

Ms. Ramkrishna also allegedly **relied on the guru's advice on crucial decisions about running the exchange** and went on holidays to tax havens such as Seychelles.

This isn't the first allegation of corporate governance lapses that have played out at NSE.

There were allegations that it **provided unfair access to some high-frequency traders** by allowing them to host co-location servers at the exchange premises to speed up algorithmic trading. This preferential access gave them unfair advantage over other traders by allowing them execute their orders ahead of others and thus making profits.

What is the need of robust Corporate Governance?

Curbing the prevalence of Scams: India has witnessed many scams like Satyam Scam, Harshad Mehta Scam etc. that erodes faith of people in the markets and the corporate sector. Such scams can be mitigated by appropriate governance norms.

Protection of Minority Shareholders: Without robust corporate governance provisions like mandatory appointment of independent directors, it is almost impossible to protect the interests of small investors.

Too big to fail: Big corporations and industrial conglomerates possess such a big influence on the Indian Economy that their failure would produce massive adverse impact on millions of Indians.

Sustenance of Competition: New players are able to enter and compete with the existing big giants only when there are robust laws. They enable their entry and forbid big players from abusing their dominant position.

Globalization: The world is getting globalized and there is a rapid flow of investments. In such a scenario a robust corporate governance structure is a sine qua non for attracting foreign capital to India.

Which committees were set-up to improve Corporate Governance in India?

Rahul Bajaj committee (1995): The Confederation of Indian Industries (CII) had set up a task force under Rahul Bajaj. The CII came up with a voluntary code called '**Desirable Corporate Governance**' in 1998.

Kumar Mangalam Birla committee report (2000): It focused on issues such as **protection of investor interest, promotion of transparency**, building international standards in terms of **disclosure of information**. The SEBI implemented the recommendations of the Birla committee through the enactment of **Clause 49 of the Listing Agreement**.

Naresh Chandra Committee Report (2002): It extensively covered the Corporate Audits and the Auditor-Company relationship.

Narayana Murthy Committee (2003): The committee was set up by SEBI to review the performance of corporate governance in India and make appropriate recommendations.

Uday Kotak Committee (2017): In light of Tata and Infosys corporate governance episodes, SEBI appointed a Committee under Uday Kotak to enhance corporate governance in India. It recommended that a listed company should have at least six directors on its board. Further, at least **one independent director should be a woman**. The report contained recommendations related to **disclosures pertaining to Related Party Transactions, ensuring independence in spirit of Independent Directors** etc.

What are the challenges in ensuring effective Corporate Governance?

Dereliction of Duty: In the ongoing NSE case, the independent directors (called Public Interest Directors or PIDs in case of exchanges) were severely lacking in their duties.

They failed to take any action against Ms. Ramkrishna when they knew about the lapses in the hiring of Mr. Subramanian. Further, they were aware that **key information pertaining to the exchange was being shared with an unknown third party**.

Lack of Monitoring: This enables the companies to disobey the established norms e.g., the re-designation of Mr. Subramaniam as COO was not tabled to the then NRC (Nomination and Remuneration Committee).

Under the provisions of the Companies Act, 2013 Mr. Subramaniam would have been a KMP (Key Managerial Personnel), and his re-designation needed approval from NRC.

Inadequate punishments: The quantum of punishments given to violators are often inadequate and **fails to create effective deterrence** for future discourse.

In the ongoing NSE case, a penalty of INR2 crore on NSE and a restriction on launching any new products for the next six months has been imposed. This is not adequate as per the opinion of various financial experts.

Challenge posed by Tax Havens: They provide a foreign corporation with a low taxation regime and often keeps their financial secrets intact which hinders corporate governance in the domestic nation.

The income tax department is probing a possible fund diversion to three foreign jurisdictions in case of NSE scam. The tax department has found frequent visits to Singapore, Mauritius and Seychelles by Ms. Ramkrishna.

Concentration of powers: Ownership of corporations in India, is still held in a few hands. A single shareholder or family controls a large group of companies. This leads to several governance related challenges and has often led to poor decision making that harms company's profits.

SEBI had made a rule to separate the roles of the Chairperson and the CEO/MD (i.e., the same person can't hold both roles) based on Uday Kotak Panel recommendations, but has made this rule 'voluntary' now. The Rule kicks in from April 01, 2022.

What steps can be undertaken to further improve Corporate Governance?

First, the **forensic auditing ecosystem** in the country should be augmented so as to effectively investigate and prosecute violators. A forensic audit examines and evaluates a firm's or individual's financial records to derive evidence used in a court of law or legal proceeding.

Second, the **double taxation avoidance treaties should be regularly updated**. Any loophole that enables a nation to be used merely as a tax haven should be rectified with robust data sharing based on mutual consent.

Third, for good corporate governance the focus should be shifted from independent directors to **limiting the power of promoters**.

Fourth, the board must invest a reasonable amount of time and money in order to ensure the goal of **data protection** is achieved.

Fifth, strengthening the power of SEBI, ICAI, and ICSI is desirable to handle corporate failure in order to reduce the need for court intervention. For example, in the Sahara case, the court had to intervene to bring justice.

The Government needs to take a plethora of steps in order to improve the status of corporate governance in India and regain the lost trust due to various scams. Every step should be aimed towards the vision of making corporate governance – inclusive, efficient, consensus oriented and based on rule of law.

[Yojana February Summary] Quality Education for All – Explained, pointwise**Introduction**

The pandemic highlighted the shortcomings of our education system that is more focused on rote learning. This system pays very low regard to the creativity and mental wellbeing of children indicating lack of quality education. Further, the level of education possessed across regions is not uniform and the disadvantaged sections often have poor education levels.

The Government has undertaken a plethora of steps including the formulation of **National Education Policy, 2020** with the vision of delivering quality education to every child. India is also a party to UN Sustainable Development Goals whose **Goal 4** aims to deliver quality education for all. Nonetheless, there remain some bottlenecks which need to be duly addressed.

What is the meaning of Quality Education?

Quality Education is a comprehensive term that includes learners, teachers, learning environment, appropriate curriculum, engaging pedagogy, learning outcomes, continuous formative assessment, and adequate student support.

It warrants inculcation of **critical thinking, creativity, scientific temper, communication, collaboration, multilingualism, problem solving skills, ethics, social responsibility, and digital literacy.**

Attempt to improve quality of education will succeed only if it goes hand in hand with steps to promote **equity and inclusion.** This requires schools to be sufficiently equipped and prepared to address the **diverse learning needs of all children** with a **special focus on children belonging to SC, ST, Minorities, Girl child** etc.

Another dimension of quality is to address the rural-urban divide and regional disparities as also the digital divide.

What is need to deliver Quality Education?

Better Employment opportunities: It will allow the children to get jobs and get out of the vicious web of poverty. Further industry will be getting a robust supply of qualified personnel. **India Skills Report 2021 estimates** that only 45.9% of Indian youth possess sufficient employability skills.

Health and Wellbeing: Quality education covers the aspect of mental and physical well being that would improve health outcomes of the nation. It will also help in reducing the prevalence of suicides in children especially due to severe educational stress.

Reaping Demographic Dividend: India has more than 50% of its population below the age of 25 and more than 65% below the age of 35. This requires delivery of quality education to children or else be prepared to face the brunt of demographic disaster.

Curbing Regional Divide: Some states like U.P and Bihar lack in education levels versus states like Kerala and Karnataka. Further delivery of education is better in urban areas in comparison to rural regions. This gap needs to be addressed by focusing on quality education for all.

Tackling Social Problems: The lack of quality education makes children prone to social evils like Child Labour and Child Marriage. Ensuring quality education will ensure higher retention and decrease dropout rates in schools. As per the latest Unified District Information System for Education Plus (UDISE+ 2019-20) report nearly **30% of the students don't transition from secondary to senior secondary level.**

Adapting to Technological Advancements: The 21st century would be an era of Big data, Machine Learning (ML), Internet of Things (IoT) and other technological advancements. This means the curriculum, textbooks, pedagogy, and assessment need to be transformed.

Realization of Fundamental rights: The Constitution of India has provided many fundamental rights like free speech, equality before law, freedom of religion etc. All these rights can be enjoyed in true sense only when a person has been imparted with quality education.

What steps have been taken by the Government for Quality Education?

Right of Children to Free and Compulsory Education Act (RTE), 2009: It provides free and compulsory elementary education to children. It ensures realization of fundamental rights under Article 21-A.

National Education Policy 2020: It envisions a shift from the traditional teacher centered to learner-centric approach. The policy stresses on the core principles that education must develop. It includes the **cognitive skills** – both ‘foundational skills’ of literacy and numeracy, and ‘higher-order’ skills such as critical thinking and problem solving.

It also focuses on social and emotional skills– also referred to as ‘**soft skills**’, including cultural awareness and empathy, perseverance and grit, teamwork etc.

Samagra Siksha Abhiyan: It is an overarching centrally sponsored scheme for school education that sees learning as a continuum from pre-primary to higher secondary with focus on **contextual, experiential, and holistic learning**. It subsumed the three erstwhile Centrally Sponsored Schemes of SSA, RMSA and Teacher Education.

Rashtriya Avishkar Abhiyan (RAA): It aims to connect school-based knowledge to life outside the school, and making learning of Science and Mathematics a joyful and meaningful activity.

Performance Grading Index (PGI): A comprehensive 70 indicator-based matrix has been developed to grade the States/UTs, against certain common benchmarks and provide them a roadmap for making improvements.

National Initiative for School Heads’ and Teachers’ Holistic Advancement (NISHTHA): It is a first of its kind teacher training programme wherein the Government of India, through its academic bodies, NCERT and NIEPA, is taking a lead role in changing the landscape of in-service teacher training.

National Initiative For Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat): It was launched in July 2021, to ensure that every child in the country attains Foundational Literacy and Numeracy (FLN) at Grade 3 by 2026-27.

PM eVidya: It is a comprehensive initiative under the *Atma Nirbhar Bharat* Programme, which unifies all efforts related to digital/online/on-air education to enable coherent **multi-mode access to education**.

It includes access to a variety of e-resources in 33 languages including Indian Sign Language over DIKSHA (One nation; One digital platform), *Swayam Prabha* DTH TV channels (One Class; one channel for class 1 to 12), Extensive use of Radio, Community radio, and Podcast – *ShikshaVani*.

What are the gaps in our current education system?

Excessive focus on rote learning: The curriculum tries to encourage memorisation of text rather than cultivating a conceptual understanding of issues.

Exams define intelligence: The current system equates passing of exams and exam scores with a student's intelligence level. There is an excessive focus on completing the exam cycle rather than learning experience.

Discourages Creativity: Parents and teachers want to see children as doctors, engineers, bureaucrats etc. Children are rarely encouraged to pursue creative fields like writers, artists or adopt any other vocational skill.

Barriers for poor sections: Good quality private schools are not present in rural regions while the fees are very high in urban regions. Further, the 25% reservation for EWS candidates in private schools has also been bypassed by many schools.

Bias against Persons with Disabilities: They are often seen as a liability by many teachers and their special needs are generally ignored.

Coaching Culture: The proliferation of coaching institutions shows the deteriorating quality of education in India. Many school teachers also engage in teaching in coaching institutions after regular school hours for extra compensation.

Lack of Vernacular content: Good quality books and material is still unavailable in the vernacular medium that creates hardships for many students and impedes learning.

What are the constraints impeding delivery of quality education?

Financial Crunch: A recent World Bank study notes that India spent 14.1 % of its budget on education, compared to 18.5% in Vietnam and 20.6% in Indonesia, countries with similar levels of GDP. This hinders creation of quality infrastructure and retention of good talent in the education sector.

Quality of Personnel: The quality of teachers in many schools is still not up to the mark. Further, many teachers struggle to deliver lectures through the online medium as observed during the pandemic.

Digital Divide: The digital systems of many schools and universities are using obsolete technology. Further, many universities lack basic infrastructure to deliver quality education thereby impeding delivery in hinterland regions. Similarly many people don't have access to digital devices like mobile phones and internet routers.

Adult Illiteracy: The lack of adult literacy allows individuals to focus on short term incomes via child labour and forgo long term good career options after inculcation of quality education.

Further, many are **unable to operate the digital devices** that hampered their children's education during the pandemic times.

What are the remedial measures?

First, the Government **should adopt a new system of education** that is fair, robust, and removes the dependency on time-tabled exams. This is required to tackle any future pandemics

or contingencies like disasters that disrupt the normal cycle. A mix of hybrid (online + offline) teaching should be promoted.

Second, the focus should be on **learning through activities, discovery, and exploration in a child-friendly and child-specific manner**.

Third, the **assessment of students must be based on an integrated approach** rather than mere textbook exams. Under this weightage should be given to indicators like peer interaction, curiosity potential, creativity acumen etc.

Fourth, to implement all these measures there is a need to support the education sector with adequate budgetary resources. Hence, it is important to increase the share of education to **6% of GDP** as envisaged by NEP 2020.

The Government should make a significant headway from earlier policies by putting quality education as the top most agenda, strengthening the foundations of education, catering to the educational needs of the most disadvantaged, and making it a global leader in education. All this is desired to truly realize the vision of '*Sabka Saath Sabka Vikas*'.

Manual Scavenging – Explained, pointwise

Introduction

Throughout history, the society has undergone profound changes in power dynamics and political ideals that have transformed individual lives as well as the idea of the collective. But the modernizing forces have been biased against the marginalized sections including dalits. This is testified by the continued existence of manual scavenging despite the same being prohibited by a Statutory Act and Supreme Court order. The practice is mainly carried on by the alleged lower caste people in India and creates numerous hardships for them. Keeping this in mind, a plethora of steps are desired to make India completely free from manual scavenging.

What is the meaning of manual scavenging?

It is defined as 'the removal of human excrement from public streets and dry latrines, cleaning septic tanks, gutters and sewers'.

Manual scavengers usually use hand tools such as buckets, brooms and shovels. The workers have to move the excreta, using brooms and tin plates, into baskets, which they carry to disposal locations sometimes several kilometers away.

The International Labour Organization (ILO) distinguishes three forms of manual scavenging: **(a)** Removal of human excrement from public streets and dry latrines, **(b)** Cleaning septic tanks, and **(c)** Cleaning gutters and sewers.

What is the extent of manual scavenging in India?

Although the practice was banned under the Prohibition of Employment of Manual Scavengers Act, 2013, the inhumane exercise continues.

According to the Government data, **97% of manual scavengers are Dalits**. The breakdown of numbers reveals that 42,594 manual scavengers belong to Scheduled Castes, 421 belong to Scheduled Tribes and 431 belong to Other Backward Classes. However the **number may be grossly underreported**.

The Socio-Economic Caste Census of 2011 had identified 180,657 manual scavengers (does not include urban India) with highest number of them in rural Maharashtra.

The *Safai Karmachari Andolan* (SKA) estimates the number of manual scavengers to be around 1.2 million.

Read More: [Manual scavenging has gone underground in India: WHO](#)

What is the need to eliminate manual scavenging?

Dehumanising Activity: Article 21 of the Constitution guarantees 'Right to Life' with dignity. The practice of manual scavenging lowers an individual's self esteem in society and is considered as a dehumanising activity.

Emboldens the concept of purity and pollution: Caste structure continues to reinforce inequality as a basic value based on the concept of purity and pollution. The allocation of labor is one of its prime manifestations. As per the notion, the alleged lower class must engage in inhuman occupations like manual scavenging.

Against Equality: Dalits often face discrimination when seeking employment in other sectors apart from traditional ancestral roles. Continuance of Manual scavenging further creates barriers for them and impedes their mobility.

Health Concerns: Manual scavenging can have severe health consequences, including constant nausea and headaches, respiratory and skin diseases, diarrhoea, vomiting, jaundice, trachoma, and carbon monoxide poisoning due to exposure to human excreta and harmful gases such as H₂S and methane. The health issues are aggravated due to malnutrition and lack of access to healthcare.

These sanitation workers, rarely have any personal protective equipment making them susceptible to poisonous gasses in the pits. According to the *Safai Karamchhari Andolan*, at least 472 people have died cleaning human excreta during the last five years.

International Commitments: India is party to UN declaration on Human rights, Convention to eliminate all forms of discrimination against women etc., which prohibit continuance of practices like manual scavenging.

What steps have been taken towards elimination of manual scavenging?

Prohibition of the Employment of Manual Scavengers Act 2013: The law intends to eliminate insanitary latrines and prohibits employment as manual scavengers. It also prohibits hazardous manual cleaning of sewer and septic tanks.

Prevention of SC/ST Atrocities Act, 1989: It became an integrated guard for sanitation workers as more than 90% people employed as manual scavengers belonged to the Scheduled Caste. This became an important landmark to free manual scavengers from designated traditional occupations.

Self-Employment Scheme for Rehabilitation of Manual Scavengers (SRMS): The scheme launched by the Ministry of Social Justice and Empowerment aims to rehabilitate manual scavengers and their dependents in alternative occupations, in a time bound manner.

Supreme Court order, 2014: It made it mandatory for the Government to identify all those who died in sewage work since 1993 and provide Rs. 10 lakh each as compensation to their families.

National Commission for Safai Karmacharis (NCSK): It is a statutory body established under the National Commission for Safai Karmacharis Act 1993. The main aim of the commission is to promote and safeguard the rights of the Safai Karmacharis.

Read More: [Cabinet approves extension of tenure of the National Commission for Safai Karmacharis for three years](#)

National Safai Karmachari Finance and Development Corporation: It is building capacity at the local government level, providing mechanized desludging trucks and financial assistance to sanitation workers.

Swachh Bharat Mission: It led to the construction of toilets with on-site sanitation systems like septic tanks and pits.

Atal Mission for rejuvenation and urban transformation: It has led to the development of infrastructure such as sewerage networks, sewerage treatment plants across 500 cities.

Why is the practice still prevalent?

Government Apathy: Both the Central and State Governments are notorious for hiding the problem. Many **contradictions** are found in government data itself. In a reply to a question in Parliament, the government said that there is no report of people currently engaged in manual scavenging and no death has been reported due to the practice in five years. However, in a reply to another question, the Ministry of Social Justice and Empowerment recognised 66,692 manual scavengers.

Vicious cycle of Poverty: Dalits are expected to clean dry latrines, carry loads of human excrement, and clear sewage for little or no income. They are trapped in a vicious cycle of poverty which makes it difficult to switch to new occupations.

Social Prejudice: Even when manual scavengers get an education and a degree, the burden of caste is heavy. Ambedkar had observed that “in India, a man is not a scavenger because of his work. He is a scavenger because of his birth irrespective of the question whether he does scavenging or not”.

Misrepresentation using Contractors: According to some well-researched media reports, the Indian Railways, the army, and urban municipalities remain the biggest bodies that still have workers engaged in manual scavenging. They either find ways to outsource such work to contractors so as not to be held directly accountable or liable or simply misrepresent such workers as 'sweepers'.

Half hearted Rehabilitation: The Government scheme provides for one-time cash assistance of Rs 40,000, skill development training, and capital subsidy for self-employed projects. But the lack of a reliable database makes these efforts futile.

Poor implementation of laws: There have been next to no serious legal proceedings against people and organisations accused of engaging workers for manual scavenging.

Existence of insanitary latrines: According to the 2011 Census, there are more than 26 Lakh insanitary latrines in the country. The existence of insanitary latrines creates a demand for manual scavenging and keeps sustaining the practice.

What are the remedial measures?

First, the **Prohibition of Employment as Manual Scavengers and their Rehabilitation (Amendment) Bill, 2020** should be duly passed. It proposes to completely mechanize sewer cleaning, introduce ways for 'on-site' protection and provide compensation to manual scavengers in case of sewer deaths.

Second, the revamped law should further be **read along with the SC & ST (Prevention of Atrocities) Act, 1989** in order to strengthen it.

Third, the government should look for **technological solutions** to reduce the prevalence of manual scavenging e.g., a bandicoot robot can be used. It goes inside the manhole and mimics all the actions of a human scavenger.

Fourth, The recommendations of the NHRC against manual scavenging must be implemented.

Read More: [NHRC recommends measures against manual scavenging](#)

Fifth, collaboration with public spirited individuals like Bezwada Wilson and organizations like *Safai Karmachari Andolan* (SKA) is desired. It would help in better formulation and implementation of policies for the manual scavengers. Their strength can also be **leveraged for bringing an attitudinal change** in society.

Sixth, it is important to understand that this is not just a problem of technology or financial assistance but also of social prejudice. There is a need of community engagement and sensitisation to eliminate the caste based prejudices.

Seventh, most importantly states **need to accurately enumerate the workers** engaged in manual scavenging to prudently move on the path of complete eradication.

Manual scavenging is regarded as inhuman and a violation of the basic human rights. This practice is prevalent and needs collaborative efforts of government, civil society and every

individual to end it. This would help in better integration of dalits in the society and reduce the extent of discrimination faced by them.

Plastic Waste Management (Amendment) Rules, 2022 – Explained, pointwise

Introduction

Plastic waste management is becoming a challenging task for countries across the globe and India is no exception to it. The use of plastic is on rise while its disposal and safe management hasn't been commensurate with increased usage. This has resulted in creation of landfills on land and garbage patches in oceans. India has been actively taking steps to effectively manage the plastic waste as seen by frequent amendments to the Plastic Waste Management Rules. The Ministry of Environment has now launched new rules called the Plastic Waste Management (Amendment) Rules, 2022.

What is the extent of plastic use in India?

India is one of the world's largest producers, importers and consumers of plastic material, a sizable part of which is utilized for packaging. A Central Pollution Control Board (CPCB) report (2018-19) puts the total **annual plastic waste generation in India at 3.3 million metric tonnes**.

This use of plastic is believed to have gone up substantially during the COVID-19 pandemic because of the surge in online shopping. Consequently, the share of plastics in the municipal waste is reckoned to have spurted from around 10% earlier to close to 20% now.

The worrisome part is that over 40% of the total plastic consumption is in the form of single-use items, including the plastic carry-bags. These have limited-period utility but high littering potential.



Source: NITI Aayog-UNDP Handbook on Plastic Waste Management

What is the meaning of Plastic Waste Management?

It refers to managing the plastic waste generated and processing it to make it reusable. The characteristic activities of waste management include: **(a)** Collection, transport, treatment and disposal of waste, **(b)** Control, monitoring and regulation of the production, collection, transport, treatment and disposal of waste, and **(c)** Prevention of waste production through in-process modifications, reuse and recycling.

What are the new Plastic Waste Management Rules?

Classification of Plastics: The new rules classify plastics into four categories: **(a)** Category One will include **rigid plastic packaging**; **(b)** Category Two will include **flexible plastic packaging** of single layer or multilayer (more than one layer with different types of plastic), plastic sheets, carry bags, plastic sachet or pouches; **(c)** Category Three will include **Multi-layered plastic packaging** (at least one layer of plastic and at least one layer of material other than plastic); **(d)** Category Four will include plastic sheets used for packaging as well as carry bags made of **compostable plastics**.

Extended Producer Responsibility (EPR): It covers reuse, recycling, use of recycled plastic content and end of life disposal by producers, importers and brand-owners. The term simply means the responsibility of a producer for the environmentally sound management of the product until the end of its life.



WHAT IS EXTENDED PRODUCER RESPONSIBILITY?

EPR refers to the responsibility of producers and brand owners to manage the disposal of products post use. It is a kind of reverse collection system ensuring recycling for end of life, post-consumer waste. It is based on the famous and important international environmental law principle of Polluter Pays, which implies that the one who pollutes must pay for keeping the environment clean and intact.

Source: NITI Aayog UNDP Handbook on Plastic Waste Management

Centralized Online Portal: It calls for creating a centralized online portal by the Central Pollution Control Board (CPCB). It will be used for the registration as well as filing of annual returns by producers, importers and brand-owners.

Environmental compensation: It shall be levied based upon polluter pays principle, with respect to non-fulfilment of EPR targets by producers, importers and brand owners. However payment of compensation will not absolve the liability and unfulfilled EPR obligations for a particular year will be carried forward to the next year for a period of three years.

Committee creation: It will be constituted by the CPCB under the chairmanship of CPCB chairman. It would recommend measures to the ministry for effective implementation of EPR, including amendments to Extended Producer Responsibility (EPR) guidelines.

Extended Producer Responsibility Certificates: The guidelines allow for sale and purchase of surplus extended producer responsibility certificates.

What are the earlier rules on Plastic Waste Management?

Plastic-waste management rules, 1999: Its aim was to restrict the use of plastic carry bags (thickness 20 µm or less) and prevent food from being packaged in recycled plastic.

Plastic Waste Management (Amendment) Rules, 2003: It diluted the restriction on carry bags but mandated registration of manufacturing units with regional pollution control authorities.

Plastic Waste Management (Amendment) Rules, 2011: For the first time, there was a national law proposing a ban on the use of plastic materials in sachets to store, pack or sell gutkha, tobacco, and pan masala.

Plastic Waste Management (PWM) Rules, 2016: It included many progressive propositions, like 'polluter pays' and 'extended producer responsibility'.

Plastic Waste Management (Amendment) Rules, 2021: The rules aim to prohibit the use of specific single-use plastic items, which have "low utility and high littering potential" by 2022.

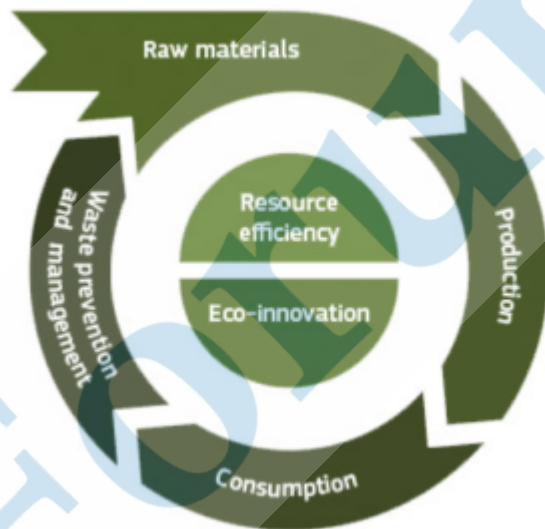
What is the significance of the new rules?

Manage High Usage: India has more than 1.3 billion people whose plastic usage has witnessed a considerable rise in the pandemic times. New rules will help manage the increasing demand of plastic and result in decreasing plastic pollution.

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Circular Economy: The rules seem to evolve a circular economy in the plastics sector by encouraging recycling, sharing, leasing, trading and safe disposal of the end-of-life plastic materials.

The circular economy is defined as an alternative to the linear 'take-make-waste'. It seeks to design out waste, regenerate natural ecosystems and keep materials and products in use for as long as possible. To this end, resources are not consumed and discarded, destroying their value. Rather, their value is retained by reusing, repairing, remanufacturing or recycling.



Source: NITI Aayog UNDP Handbook on Plastic Waste Management

Domestic Targets: It would help the Government meet its targets in a more effective way e.g., the latest **deadline for eliminating the single-use plastic waste is July 2022.**

Ease of Trading: These norms seek to create a market for the sale, purchase and sharing of EPR compliance certificates on the lines of the carbon trading mechanism for mitigating climate change.

Substitute promotion: The enhanced penalties and stricter norms would induce the manufacturers to **shift to more environmentally friendly alternatives like jute.**

Landfill Reduction: The country is witnessing a rise in landfill creation especially across major cities like Delhi, Mumbai etc. The Ghazipur landfill in Delhi is soon expected to surpass the height of Qutub Minar. The promising provisions of new rules will reduce their creation.

What are the associated challenges?

Poor track records: The success would rely largely on how effectively these norms are governed by the Central and State Pollution Control Boards whose past records in plastic waste management are quite uninspiring. This is testified by frequent violation of plastic rules in major cities like Delhi, Bengaluru etc.

Corruption: The prevalence of corruption impedes the effective implementation of rules and fails to create a substantial deterrence on violators. India's rank has slipped six places to 86th among 180 countries in Corruption Perception Index (CPI) 2020.

Rigid Behavior: The rules calls for limiting plastic usage but the mass inclination towards it can't be easily reduced owing to its cheap price and non availability of cost effective alternatives.

Informalized Structure of waste collection: This inhibits a strong linkage between waste collectors and processing plants.

No global law or convention: There is currently **no dedicated international instrument** in place **designed specifically to prevent plastic pollution** throughout the entire plastics lifecycle.

What are the remedial measures?

First, the Government should support the **creation of sustainable bioplastics.** These plastics can be decomposed by the action of living organisms, usually microbes, into the water, carbon dioxide, and biomass.

Second, the masses should be **sensitized** over adverse impacts of plastic use by collaborating with **NGOs like Greenpeace India.** They must be encouraged to adopt the notion of **3R's** – reduce, reuse and recycle plastic by inculcating **green intelligence** in them.

Third, the Government should **provide sustained employment opportunities to rag pickers by giving them green jobs.** This would significantly improve processing of plastic waste in the country and reduce creation of landfills.

Fourth, an **independent environment regulator** as envisaged by the Supreme Court should be created to oversee prudent implementation of the new rules.

Fifth, the countries **must cooperate to draft a dedicated global law** as isolated domestic acts can't fully tackle the problem of plastic waste management.

Conclusion

Plastic was considered a miracle material, as its synthetic polymers give it astonishing durability. However today it is filling up our oceans and destroying marine life and even invading our food chain to get into our bodies. The menace posed by it needs to be tackled by ensuring robust plastic waste management and promoting the use of alternatives.

Source: [Business Standard](#)

[Yojana February Summary] Skilling Youth for Future – Explained, pointwise

Introduction

India is celebrating its 75th year of Independence and today's youth, born in the 21st century, are going to carry India's development journey forward till the 100th year of Indian independence. The Prime Minister of India had recently remarked that 'skilling youth of this new generation is a national need and the foundation stone for a self-reliant India'.

The Government has taken many steps for skilling youth but their level still falls short when compared to the youth of other countries like Japan, S. Korea etc. This calls for addressing the bottlenecks that are impeding skill development in the country and allow them to stand at par with their peers at global level.

What is the meaning of skills?

According to a **2018 report of the National Council of Applied Economic Research (NCAER)**, there are three types of skills.

First, the **cognitive skills**, which are the basic skills of literacy and numeracy, applied knowledge and problem-solving aptitudes and higher cognitive skills such as experimentation, reasoning and creativity.

Then there are the **technical and vocational skills**, which refer to the physical and mental ability to perform specific tasks using tools and methods in any occupation.

Lastly, there are **social and behavioral skills**, which include working, communicating, listening and responding to others.

What is the need for skilling youth?

High Demand: Various sectors like IT-ITeS, Renewable Energy/Green Energy, Power, Hospitality, Tourism, Electronics manufacturing, Green Construction etc. require skilled personnel for realizing their true potential. There is a huge shortage of skilled people in these sectors.

Unemployment rates: The unemployment rate between January to April 2021 in India was 6.83% as per data of Center for Monitoring Indian Economy (CMIE), further rising to 7.9% in December 2021. A more disturbing thing is that the rate was 19% for graduates which testifies the need for focusing on skill. Skilling youth will provide for meaningful employment opportunities.

Demographic Dividend: India has the largest working force in the world and is observing a dividend window until 2040. However if proper skills are not provided then this dividend can easily turn into a demographic disaster.

Greater Foreign Investment: India will receive greater investment if it can provide skilled workforce to the multinational companies. For instance, a surge in investment was observed in Bengaluru when the city started providing skilled IT professionals to the world.

Climate Change: The 6th report of IPCC has cautioned the world towards the grave consequences of climate change. Every country including India is now in a need of **developing green skills** that can mitigate the adverse impacts of climate change. The United Nations Industrial Development Organization (UNIDO) defines green skills as the knowledge, abilities, values and attitudes needed to live in, develop and support a sustainable and resource-efficient society. According to UNIDO, green skills will be crucial in realizing the SDG 9 which includes the target of **upgrading infrastructure and retrofitting industries** to make them sustainable.

What steps have been taken for skilling youth?

National Educational Alliance for Technology (NEAT) 3.0: It is a single platform to provide the best-developed ed-tech solutions and courses to students of the country. These solutions use AI for a personalized and customized learning experience for better learning outcomes and skill development in niche areas. Around 58 global and Indian startup ed-tech companies are onboard NEAT.

Centrally Sponsored Scheme (CSS) of Vocationalisation of Secondary Education: It was launched in 1988 and aims to integrate vocational education with general academic education. Currently, the scheme is being implemented as part of the Centrally Sponsored Scheme 'Samagra Shiksha' and has been aligned with the National Skills Qualification Framework (NSQF).

National Skills Qualification Framework: It is a nationally integrated education and competency-based framework. It organizes qualifications according to a series of levels of knowledge, skills, and aptitude.

Samagra Shiksha Abhiyan: Under *Samagra Shiksha*, 14,435 schools have been approved to impart Vocational Education. Currently, more than 1.5 million students are undertaking vocational education under *Samagra Shiksha* as a part of their Secondary and Senior Secondary curriculum.

National Education Policy, 2020: The aim of policy will not only be cognitive development, but also building character and creating holistic and well-rounded individuals equipped with the key 21st century skills. It has set a goal that by 2025, at least 50% of learners through the school and higher education system, shall have **exposure to vocational education**.

The **Employability Skills module** consisting of Communication Skills, Self Management Skills, Information and Communication Technology Skills, Entrepreneurship Skills, and Green Skills has been made a mandatory part of the Vocational Courses.

What are the challenges in inculcating skills?

Infrastructure Deficit: Many schools don't have equipment, big buildings, technology support etc. to provide quality vocational education to children.

Societal Bias: A strong notion exists in Indian society that weak children take up vocational courses. This discourages parents from sending their children to vocational courses despite the child's interest.

Low participation of States: Many states struggle in arranging the finance for imparting core academic education to students and their participation is even worse in case of vocational education.

At present, various components of Vocational Education are being supported by national agencies/institutions. This includes Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), National Skill Development Corporation, Sector Skill Councils, etc..

Industry Mismatch: Often the skills imparted to students fail to meet industry standards and results in unemployment. Employers tend to replace the individual having outdated skills with a new age machinery.

Lack of Vertical Mobility: The quality of skills imparted in schools is often not up to the mark and fail to provide good employment opportunities. Further, progress is impeded with lack of vertical mobility after 12th class and poor integration of vocational education with mainstream education at all levels.

Read More: [Bringing skills and education closer](#)

Top Down approach: Often a standardized curriculum from the central level is designed for imparting skills that pays very less emphasis on locally relevant skill education.

What more needs to be done?

First, integration of vocational and academic education should be done expeditiously. For this, the **proposed unified credit accumulation and transfer framework should become a reality**.

Second, institutions should **restructure and re-orient pedagogy in schools and higher education institutions**. It will encourage greater adoption of vocational subjects through novel means like **activity based learning** in place of traditional rote learning models.

Third, as envisioned by NEP 2020, **different models of Vocational Education** should be introduced so that locally relevant skill education can be offered in appropriate manner.

For this, capacity development of State level institutions like State Council for Vocational Education and Training (SCVET), State Council of Educational Research and Training (SCERT) and its subordinate bodies is a sine qua non.

Fourth, the **teachers should do counselling sessions with parents** to make them understand the **dignity of labor** and the worth of vocational education. This would ensure transition to vocational courses out of choice and not as a compulsion.

Fifth, the **hub and spoke model under the Samagra Shiksha Scheme should be duly extended to support institutions** that lack in infrastructure.

Under this, schools with requisite infrastructure will act as hubs and provide skill education to the children from surrounding spoke schools. Scheme guidelines provide for additional funds for such Hubs, as well as transportation of children between the hub and its spoke.

Sixth, due **consultation with industry experts** is envisaged on regular intervals for updating the current curriculum and focusing on new age skills like Machine learning, Data Science, Cloud Computing etc.

Seventh, **Digital skilling** should become the core programme of all the skill development activities. Further, **Artificially intelligent training delivery systems** need to be developed and promoted. This would ensure that the training can be customized according to the needs of the learner and its outreach be enhanced.

Conclusion

India is on its way to implement the key reforms for integrating and mainstreaming vocational education with general education. At the same time, the role of all stakeholders at all levels becomes really crucial for ensuring that children are provided with vocational and life skills required for the 21st century.

India-Russia Trade Relationship Post Russia-Ukraine Crisis – Explained, pointwise

Introduction

The World is currently witnessing a very unpleasant situation in the Eastern European region. The Russian troops have invaded Ukraine and are advancing towards the capital city of Kyiv. The Western nations including the U.S, the UK and Germany etc. have imposed economic sanctions on Russia but they haven't been able to stop the Russian military. These sanctions can create severe roadblocks to trade with Russia in the near future and may adversely impact India-Russia trade relationship.

What is the history of India- Russia relations?

Russia has been a longstanding and time-tested partner for India. Development of India-Russia relations has been a key pillar of India's foreign policy. In the Cold War era, India had signed the **Indo-Soviet Treaty of Friendship and Cooperation** with the USSR in August 1971, just before the onset of the Indo-Pak War in December 1971. This was a significant deviation from India's previous position of Non-Alignment during the Cold War.

Post the Cold War era, A Declaration on the **India-Russia Strategic Partnership** was signed in October 2000. Since then, the ties have acquired a qualitatively new character with enhanced levels of cooperation in almost all areas of the bilateral relationship. Under the Strategic

Partnership, several institutionalized dialogue mechanisms operate at both political and official levels to ensure regular interaction and follow up on cooperation activities.

During the visit of the Russian President to India in December 2010, the Strategic Partnership was **elevated to the level of a “Special and Privileged Strategic Partnership”**.

The 21st India- Russia summit took place in December 2021 where the leaders reiterated a Partnership for Peace, Progress and Prosperity.

Read More: [Recent developments in India-Russia Relations](#)

What is the current status of India-Russia Trade Relationship?

India and Russia trade in diverse sectors including defense, energy, IT, pharmaceuticals, agro-industries, mineral and metallurgy, fertilizers etc.

India-Russia trade was valued at the US\$ 10.11 billion in 2019–20. Russia’s exports to India stood at US\$ 6.9 billion in 2021, mainly mineral oils, fertilizers and rough diamonds. While India exported US\$ 3.33 billion worth of goods to Russia in 2021, mainly pharmaceutical products, tea and coffee.

Defense business between Russia and India is booming, with contracts worth over US\$ 15 billion in the pipeline. In 2019, the Stockholm International Peace Research Organization report put **Russia as India’s biggest arms supplier** from 2014-18, **accounting for 58% of all India’s defense imports**. Russia had accounted for 76% of India’s defense imports between 2009-13.

What is happening in the Russia-Ukraine crisis?

Russia invaded Ukraine by land, air and sea on 24th February, 2022. It is the biggest attack on a European state since World War Two, prompting tens of thousands of people to flee their homes.

G7 leaders on 24th February, promised ‘devastating packages of sanctions’ on Russia.

Russian forces pressed their advance on 25th February and the Ukrainian President pleaded with the international community to help the nation.

The U.S on 25th February announced that exports of nearly all US items and items produced in foreign countries using certain US-origin software, technology or equipment will be restricted to targeted military end-users. Thereby making defense deals with Russia even more difficult.

Other European nations including Britain and Germany have also imposed significant economic sanctions on Russia. These sanctions impede Russia’s ability to do business in major currencies and target individual banks and state-owned enterprises. This will impact India-Russia Trade Relationship.

Read More: [Flashpoint Ukraine](#)

How the deepening of the crisis would impact India-Russia Trade Relationship?

Defense Roadblocks: There would be **negligible possibility of getting a waiver from the U.S** under the [CAATSA Act](#) for purchasing [S-400 defense system](#) from Russia. The act mandates sanctions against countries that engage in “significant transactions” with Russian, Iranian and North Korean defense and intelligence entities.

Farming Sector constraints: Vital supplies of fertilizers from Russia could be disrupted as sanctions intensify, threatening India’s vast farm sector. Russia and Belarus usually account for nearly a third of India’s total potash imports which is a key ingredient of fertilizers.

Stalemate to joint projects: India, Russia and Ukraine have a \$3 billion contract for the purchase of Russian [Krivak-III frigates](#).

With some difficulty, New Delhi had negotiated an arrangement that required India to buy the Zorya turbines from Ukraine and transport them to Yantar Shipyard, Russia. From here they would be installed on the two Krivak-III frigates and then sailed to India. Ukraine is now highly unlikely to supply the Zorya turbines to Russia.

Concerns for Steel sector: India-Russia collaboration in the mining and steel sector would be undermined with deepening of the crisis. The collaboration would have given India an advantage in terms of pricing for domestic steel makers and assured supplies of one of the most critical inputs(coking coal) that accounts for 40% of the total cost of production of steel.

Difficulty in managing the Pandemic: A new wave might emerge in future and sanctions could create impediments in cooperation. India supplied critical medicines, including hydroxychloroquine during the first wave in Russia. Similarly, Russia provided ventilators, oxygen concentrators and other critical equipment during India’s second wave.

Hit to Nuclear energy: In Dec 2014, DAE and Russia’s Rosatom signed the Strategic Vision for strengthening cooperation in peaceful uses of atomic energy. Kudankulam Nuclear Power Plant (KKNPP) is being built in India with Russian cooperation. Its progress may get hindered post the crisis.

Undermining the potential of regional groupings: A rise in the magnitude of sanctions on Russia would reduce intra-member trading potential in groupings like BRICS, Shanghai Cooperation Organization etc. Further negotiations on fostering a trade agreement between India and The Eurasian Economic Union may get stalled.

Breach of Targets: The countries have a target of increasing bilateral investment to US\$ 50 billion and bilateral trade to US\$ 30 billion by 2025. However it may not be achieved considering the ongoing crisis and the sanctions.

Read More: [Energy cooperation as the backbone of India-Russia ties](#)

What are the options for India?

First, India without taking any sides should take proactive steps for bringing an immediate end to violence as it brutally undermines both letter and spirit of International law.

Second, India should set up a **rupee payment mechanism for trade** with Russia to soften the blow of Western sanctions on Russia. Under this, the plan is to get Russian banks and companies to open accounts with a few state-run banks in India for trade settlement. India had also used it with Iran after it came under Western sanctions for its nuclear weapons programme.

Third, India must leverage platforms like 2+2 dialogue for crafting a sustainable course of engagement with Russia in the future.

Fourth, India should look for alternatives in place of Russia and reduce its high degree of dependence in sectors like defense and energy. This is desired considering the uncertainty of the situation and high probability of even stricter sanctions by the western nations in future. For instance, in the case of coking coal, focus should be on Australia, Brazil and other Central Asian countries.

Conclusion

The Ukraine-Russia episode shows the dwindling pace of international law and loss of respect towards the sovereignty and integrity of nations. Hence there is a dire need for the world leaders to come together and realize the core objective of the UN's preamble that places a duty to save succeeding generations from scourge of war. As an incumbent member of the UNSC, India must push for brining the hostilities to an immediate end. At the same time, India should take proactive steps to hedge its interests amid the uncertainties.

The Russia-Ukraine Conflict – Explained, pointwise

Introduction

On 24th February 2022 the Russian troops invaded the Ukrainian territory from three sides and the Russia-Ukraine conflict is getting intensified with every passing day. The Russian attack has sent shock waves across the world and created hardships for native Ukrainian citizens as well as the diaspora of foreign countries residing in Ukraine. The Western nations have imposed sanctions on Russia and have called for a UNSC meeting over the issue. But none of this has been able to deter Russia to soften its approach towards its intervention in Ukraine.

What has been the historic relationship between Russia and Ukraine?

A millennium ago, what is Ukraine today was part of the Kievan Rus' (Rus' land). It was a federation of the East Slavic, Baltic, and Finnic peoples of Eastern and Northern Europe, with its capital in Kyiv. **Modern Ukraine, Russia, and Belarus all trace their cultural ancestry to the Kievan Rus'**. After the decline of Keivan Rus', the Ukrainian region was part of different empires and regions. Moving forward to the 19th century, the region was **under the control of the Russian Tsar**. This historical association had made the Russian President to note that *'Russians and Ukrainians are one people divided artificially by borders and outsiders'* in an essay titled, 'On the Historical Unity of Russians and Ukrainians'.

During the World War 1 (1917), the Bolshevik revolution took place in Russia that ended Tsar's reign. Months after the revolution, an independent Ukrainian People's Republic was proclaimed. However, a civil war continued between various claimants to power, including Ukrainian factions, anarchists, Tsarists, and Poland. Eventually in 1922, **Ukraine (Ukraine SSR) became part of the Union of Soviet Socialist Republics (USSR)**.

In the late 1980s, as the internal conflict intensified in the USSR, over 300,000 Ukrainians created a human chain in support of freedom, and the so-called **Granite Revolution** of students sought to prevent the signing of a new agreement with the USSR in 1990. On August 24, 1991, after the failure of the coup to remove President Mikhail Gorbachev and restore the communists to power, the Parliament of Ukraine adopted the country's Act of Independence. A referendum for independence held in December 1991 was supported by 92% of the people. In December 1991, the leaders of Belarus, Russia, and Ukraine formally dissolved the Soviet Union and **formed the Commonwealth of Independent States (CIS)**.



Source: The Hindu

How did Ukraine fall out with Russia?

After its independent in 1991, Ukraine adopted a largely **neutral foreign policy**. It was one of the founding members of the CIS, but did not join the [CSTO](#) (Collective Security Treaty

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Organisation). Initially, Ukraine stayed away from NATO as well. But the offer of membership by the NATO in 2008 started changing equations between Moscow and Kyiv.

After the regime of pro-Russian Viktor Yanukovich was brought down in the 2014 Euromaidan protests and a pro-West government was established in Kyiv, the relationship turned hostile. Russia suspected hands of the Western Governments in engineering the regime change. Russia moved swiftly to take Crimea, which also hosts Russia's Black Sea fleet, and started supporting separatist rebels in Donbas region in east Ukraine.

Ukraine later exited the CIS and wrote its desire to join NATO into its Constitution. These developments pulled the countries apart, setting the stage for permanent hostility, which led to the current conflict.

How has the Russia-Ukraine Conflict unfolded so far?

On 21st February 2022, the Russian President announced his decision to recognise the two breakaway regions of Ukraine (Donetsk and Luhansk) as independent states. On 24th February, Russia invaded Ukraine by land, air and sea. The main targets were military infrastructure. Russian forces pressed their advance on 25th February and the Ukrainian President pleaded with the international community to help the nation. A martial law has been imposed in Ukraine to effectively deal with the situation.

● Where attacks and explosions have been reported across Ukraine



Last updated: Feb. 25, 2022 at 8:45 a.m. ET

Note: Extent of Russian-backed separatist-controlled area based on reporting as of Jan. 24, 2022. Attacks and explosions shown are those currently verified by CNN.

Source: The CNN

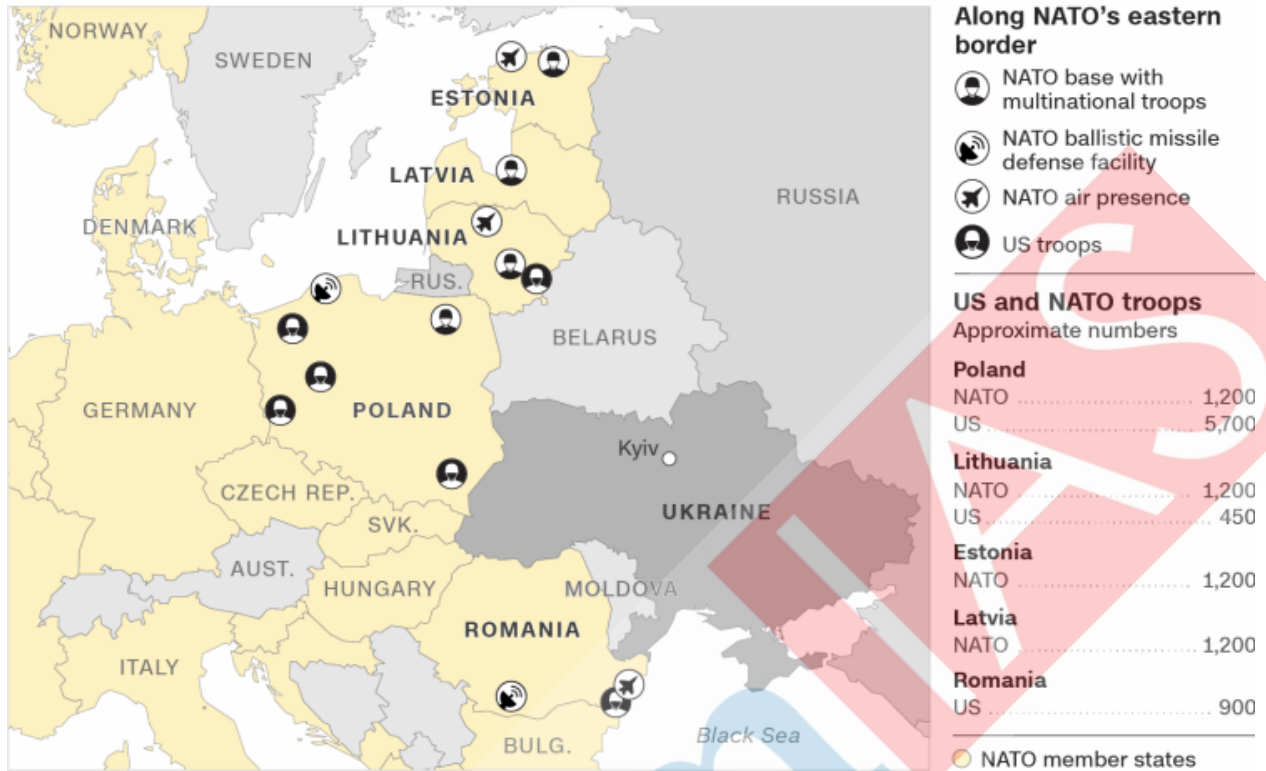
What are the reasons behind Russian intervention?

Security Concern: The **influence of NATO has been expanding eastward** in the European region since the Soviet collapse. The erstwhile USSR states like Estonia, Latvia etc. and the former Communist States in Soviet Sphere of influence like Romania have now joined the NATO.

The Enlargement of NATO, 1949–2018



There was a strong Russian apprehension that Ukraine was about to join NATO and that would have led to complete encirclement of Russia's western border by the NATO. The **NATO enlargement** has been accompanied by deployment of Western military resources in the vicinity of Russia.



Note: This graphic shows forces focused on the defense of member states in NATO's east along with US Army troops in the same countries; it excludes military capabilities of individual member states. Troop numbers are approximate, latest available as of February 9, 2022. The US Army has small numbers of liaisons and advisors in Latvia, Estonia, Slovakia, and Hungary.

Source: The CNN

Right of Self Determination: Russia said Ukraine hosts a substantial portion of masses that want to create an independent nation. In this regard, it recognized Donetsk and Luhansk as independent states. The intervention is a step towards converting this formal announcement into reality.

Strategic considerations: Russia was constantly losing its glory and power in the European region to its western counterparts. Intervention is seen as a strong message to show the magnitude of power possessed by the nation.

How has the world reacted to the Russia-Ukraine Conflict?

G7 leaders on 24th February, promised 'devastating packages of sanction' on Russia. They however didn't promise direct military intervention as Ukraine is not a NATO member. Nonetheless, they showed commitment to supply the necessary arms and ammunition to Ukraine.

The U.S, Britain, Germany and many other nations imposed harsh sanctions to cripple the Russian Economy. The sanctions would impede Russia's ability to do business in major currencies and targeted individual banks and state-owned enterprises.

Similarly, a **UNSC meeting was organized** to condemn the Russian military action against Ukraine. The meeting was vetoed by Russia and hence the resolution couldn't pass. However not all remaining 14 members voted in favor as 3 members (**India, China and UAE**) **abstained from voting**.

What could be the probable impacts of the Russia-Ukraine Conflict?

Loss of Human Lives: The most harmful impact would be loss of human lives from either side. No matter which nation emerges victorious in the conflict, a substantial number of people will certainly die.

Nuclear Risk: The Russian forces have taken control over the Chernobyl nuclear power plant. Their rampant activity may increase nuclear radiation levels around the region. Further Russia may use Nuclear Weapons if Western powers intervene in the matter, with the Russian nuclear deterrent forces already on high alert.

Militarization of Europe: An arms race could start again in Europe, with countries trying to raise their arsenal for protecting themselves against the sudden intervention from strong powers.

Global Economic Slowdown: The sanctions imposed on Russia may surge Global Prices of various commodities including oil. Trade would also be impacted. Stock markets have already plunged, and oil prices surged since the start of the conflict.

Undermining the Credibility of the UN: If the crisis doesn't come to a halt in due time, then it would erode the UN's credibility amongst smaller nations. It would further concretize the saying of might is right and undermine the concept of sovereign equality.

What are the options before India regarding the Russia-Ukraine Conflict?

There are **four potential options** India can choose from: **(a)** Condemn Russian aggression; **(b)** Support Russian aggression; **(c)** Stay silent on Russian aggression, or **(d)** Express displeasure (short of condemning) and call for diplomacy.

The first option will pit India against Russia, the second will pit it against the U.S. and its allies, the third option will be read as pro-Russia, and the fourth option — which it has taken — is the least harmful.

India has **expressed displeasure but not outrightly condemned the intervention**. India has called for an 'immediate cessation of violence' and has so far refused to pay heed to Ukrainian Ambassador's pleas urging it to mediate with Mr. Putin to halt Russian military advances.

What is the rationale behind India's stance?

Countering China's Rise: Relying solely on the U.S and its allies is not enough to counter China's aggressions. It needs both the U.S./the West and Russia to deal with the 'China problem'.

Unavoidable dualism in Contemporary Indian strategic landscape: New Delhi needs Moscow's assistance to manage its continental difficulties. These include **ensuring defense**

supplies, helping India 'return' to Central Asia, working together at the Shanghai Cooperation Organization (SCO) or exploring opportunities for collaboration in Afghanistan. On the other hand, India is simply not in a position to address the China challenge in maritime space without the active support of American and Western navies.

Trade and Investment: India- Russia trade is valued at around \$10 billion dollars. India **imports a substantial amount of energy and defense material** from Russia. Any extreme stance against Russia would have jeopardized the trade.

Read More: [India-Russia Trade Relationship Post Russia-Ukraine Crisis – Explained, pointwise](#)

What would be the impact of a prolonged Russia-Ukraine Conflict on India's interest?

First, Russian action in Ukraine, dismissing the concerns of the rest of the international community, will embolden China and its territorial ambitions. China might adopt a more aggressive stance against Taiwan.

Second, the new sanctions regime may have implications for India's defense cooperation with Moscow.

Third, the longer the standoff lasts, the closer China and Russia could become, which raises new challenges for Indian diplomacy.

Fourth, the more severe the US-Russia rivalry becomes, the less focus there would be on the Indo-Pacific and China, which is where India's interests lie.

What lies ahead for India?

Going forward, India's ability to be a 'swing state', 'major power' or a 'leading power' stands diminished. So India might adopt a **more middle-of-the-road behavior** rather than resolute positions on global strategic developments.

India should **look for alternatives** in place of Russia and reduce its high degree of dependence in sectors like defense and energy. For instance, in the case of coking coal, focus should be on Australia, Brazil and other central asian countries.

The countries should encourage **diplomacy and dialogue** between Russia and Ukraine based on mutually agreed terms. This is sine qua non for bringing long lasting peace in the region.

Until that is achieved, the focus should be on ensuring that Russia functions as per the **Geneva Conventions on International Humanitarian Law**.

Conclusion

The Russia-Ukraine Conflict is a litmus test for the International law which can be passed only when the major world powers are willing to dilute their rigid stance and cooperate on bringing everlasting peace in the region.