VAJIRAM & RAVI
Institute for IAS Examination

The Analyst

CURRENT AFFAIRS Handout

25th December 2024

The Analyst Handout

25th December 2024

Decoding India-China Relations

CONTEXT: NSA Ajit Doval visited Beijing for the Special Representatives' talks, resuming the dialogue mechanism after a four-year hiatus following the 2020 Galwan Valley clashes.

Decoding India-China Relations:

- Mix of '3Cs'
- Modern Geopolitical Complexities

Evolution of Relationship

- **Ancient Era**: Cultural and Religious Ties: Buddhism & Silk Route;
- **Medieval Period:** Limited interactions; Maritime trade between India and Southeast Asia
- **Colonial Era (18th-20th Century)**: Shared experience of Western exploitation; Tagore's Visit; Shared anti-imperialist sentiment
- **Post-Independence Cooperation (1947–1959)**: PRC in 1950; Panchsheel Agreement (1954); Differences over Tibet arose
- **Conflict and Estrangement (1962–1988)**: Sino-Indian War (1962), Sikkim (1967) and Sumdorong Chu Valley (1987); Diplomatic Freeze
- **Normalization and Strategic Rivalry (1988–Present)**:
  - Improved Relations (1988–2008)- Rajiv Gandhi's visit; 1993 Peace and Tranquility Agreement
  - Recent Challenges (2008–Present) - Border Disputes; Skewed Trade Relations; Geopolitical Rivalry

Issues & Challenges

- **Border Disputes and Territorial Claims**: LAC - frequent standoffs; Aksai Chin & Arunachal; 'dual-use villages'
- **Economic Imbalances and Trade Deficit**: 'massive trade deficit'; Exponential rise in exports from China; 'Consistent' backdoor entry into India
- **Water Resource Disputes**: Control over upstream rivers; constructed multiple dams - Medog; no water-sharing treaty between the two countries; Hydrological data
- **Cyber Threats**: Frequent cyber attacks in India; Banning of Chinese apps
- **Regional Influence Competition**: BRI's CPEC; port facilities - dual purpose; military cooperation with Pakistan
- **Diplomatic and International Forums**: India's NSG & UNSC membership; Deep inroads in Latin America, Africa

Importance of China for India

- **Raw Material Dependency**: India's largest trading partner; Heavily reliant on Chinese supplies; >70% APIs, electronic components; 80% of its total solar imports
- **Technology and Digital Infrastructure:** Despite bans, Chinese dominance; Chinese smartphone; Critical telecommunications & Battery tech
- **Investment and Expertise**: Technical expertise; Several Indian startups- substantial Chinese investments
- **Trade Route Dependency**: SE Asia - RCEP Members; South China Sea and Malacca Strait

The Analyst Handout
25th December 2024

Decoding India-China Relations

CONTEXT: NSA Ajit Doval visited Beijing for the Special Representatives' talks, resuming the dialogue mechanism after a four-year hiatus following the 2020 Galwan Valley clashes.

Way forward for India

- **Economic Diversification and Self-Reliance**: domestic manufacturing capabilities - PLI, Semiconductor Mission; Strategic partnerships - Japan, South Korea, and EU nations; Boost MSMEs; standards and certification processes
- **Strategic Military Modernization**: Along the LAC; Enhance surveillance capabilities; mountain warfare capabilities
- **Regional Leadership Enhancement**: Increased assistance; BIMSTEC, IORA; alternative supply chain networks- SCRI
- **Diplomatic Engagement Strategy**: Dialogue through multiple channels; Active participation in multilateral forums; issue-based coalitions; Continue 'strategic autonomy'

Editorial: Mutual Steps Required for Trust-Building

- **Steps by China:** Assure Security; Support India's Rise; Respect Equality
- **Steps by India:** Avoid Power Asymmetry Narratives; Maintain One China Policy; Reduce Anti-China Sentiments

Trust-Building Actions: Low-Hanging Fruits

- Restart Direct Flights
- Increase Visas
- Journalist Exchange
- Lift App Bans
- Boost Trade and Investment: Indian Imports; Greater FDI from China

MAINS PRACTISE QUESTION:

"The India-China relationship is characterized by a mix of cooperation and competition, influenced by historical border disputes, economic interdependence, and regional geopolitics. Critically Analyze"

(15 Marks, 250 words)

The Analyst Handout

25th December 2024

Supreme Court on 'Gig Economy'

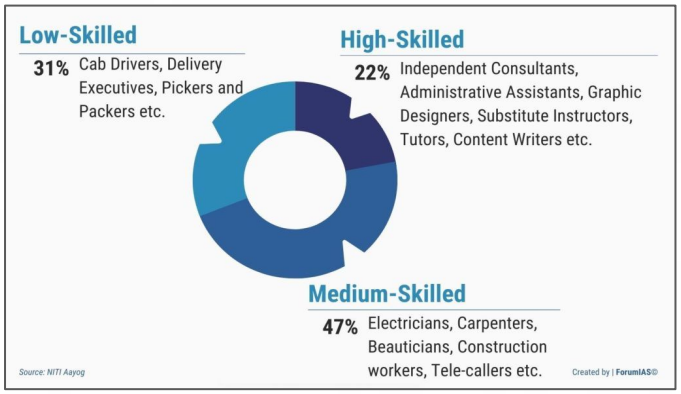
CONTEXT: The SC has said in a judgment that the government, one of the largest employers in the country, must not emulate the "precarious employment arrangements" seen with the rise of the gig economy.

Key Sectors:

- **Transport and logistics** (drivers for companies like Uber, Ola)
- **Food delivery and e-commerce** (Zomato, Swiggy, Amazon, Flipkart)
- **Personal services** (UrbanClap, Housejoy)
- **Freelancers** (designers, writers, software developers on platforms like Upwork, Freelancer)
- **Healthcare and education** (online tutors, telemedicine professionals)

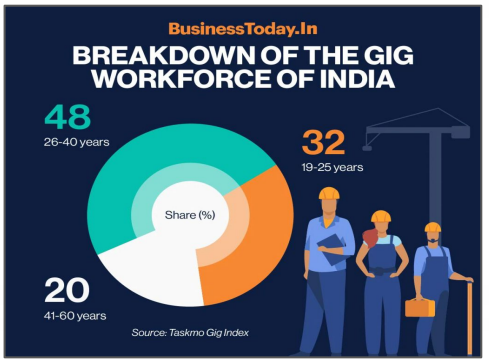
Demographics:

- **Age**: Most gig workers are in the age bracket of 18-35 years.
- **Skill Levels**: Gig work ranges from low-skilled (e.g., delivery agents) to highly skilled (e.g., freelance developers, consultants).
- **Income**: While some high-skilled workers earn substantial incomes, most gig workers, especially in delivery services, earn lower wages with inconsistent income flows.



What is Gig Economy?

- Labor market - *short-term, freelance or contract-based work arrangements*
- Often facilitated through **online platforms**
- Represents a **shift towards** a more *flexible, task-based and on-demand workforce*
- Independent contractors, freelancers, or part-time workers



The Analyst Handout

25th December 2024

Supreme Court on 'Gig Economy'

CONTEXT: The SC has said in a judgment that the government, one of the largest employers in the country, must not emulate the "precarious employment arrangements" seen with the rise of the gig economy.

Major Challenges Faced by Gig Workers in India?

- Lack of Basic Rights and Social Security
- Precarious Employment and Income Insecurity
- Algorithmic Management
- Exploitation and Unfair Treatment
- Health and Safety Risks
- Lack of Collective Bargaining Power
- Digital Divide and Skill Gaps

Government Initiatives and Schemes

- **Code on Social Security, 2020 –** extending social security benefits; Social Security Fund
- **e-Shram Portal –** to register unorganized workers; UIN; access benefits; As of Feb, 2023 - over 280 million unorganized workers
- **Skill India and Digital India Initiatives –** upskilling and digital literacy programs; access better opportunities
- **State Government Initiatives –** State Gig Workers Welfare Board in 2021 - Karnataka
- **Labor Welfare Schemes –** PMSYM**;** after the age of 60

Q10. भारत में महिलाओं के सशक्तिकरण की प्रक्रिया में 'गिग इकोनॉमी' की भूमिका का परीक्षण कीजिए। (150 शब्दों में उत्तर दीजिए)

Examine the role of 'Gig Economy' in the process of empowerment of women in India. (Answer in 150 words) *10*

MAINS PRACTICE QUESTION:

"Gig Economy in India offers great potential to transform the overall labour market and enhance economic returns. However, it faces some serious challenges which need adequate policy response. Discuss."

(15 Marks, 250 words)

Way Forward

- **Legal Recognition and clarity - "employees"**
- **Improving Social Security Coverage -** Social Security Code needs faster implementation
- **Minimum Wage and Work Hour Regulation**
- **Digital and Financial Literacy Programs**
- **Platform Accountability –** algorithm transparency, fair compensation, and grievance redressal mechanisms
- **Welfare Boards and Worker Cooperatives**
- **Health and Safety Standards**

The Analyst Handout

25th December 2024

India's share highest in Global Remittances

SYLLABUS : GS 2: Diaspora **GS 3:** Remittances, Indian Economy
Newspaper : The Hindu **Page No :** 13

In 2024, India received an estimated $129.1 billion worth of remittances, the highest ever for a country in any year. Moreover, India's share in global remittances was 14.3% this year, the highest such share since the turn of the millennium for any country. The conclusions are based on a blog article published last week by the World Bank.

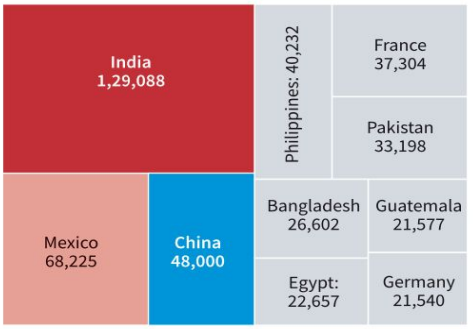
Remittances refer to the money that individuals working abroad send back to support their families in their home country. They are often a crucial source of income for households in developing countries and can contribute significantly to the economy of the recipient country.

Following India, Mexico and China received the largest remittances in 2024. **Chart 1** shows the top 10 receivers of remittances in $ million in 2024. The Philippines, France, Pakistan, Bangladesh, Egypt, Guatemala, and Germany are the other countries on the list.

While China was third on the list, past years' numbers provide interesting insights. **Chart 2** shows the share of global remittances for the top 10 countries mentioned in Chart 1 in the 2000-2024 period. China's share of remittances grew from less than 1% in the early 2000s to over 10% by the late 2000s and early 2010s, matching India's numbers, before gradually declining to below 10% in the late 2010s. From 2020, the share declined rapidly reaching a two-decade low of 5.3% in 2024. According to the World Bank, China's rising economic prosperity and an ageing population slowed the pace of emigration of less-skilled people, which contributed to this decline.

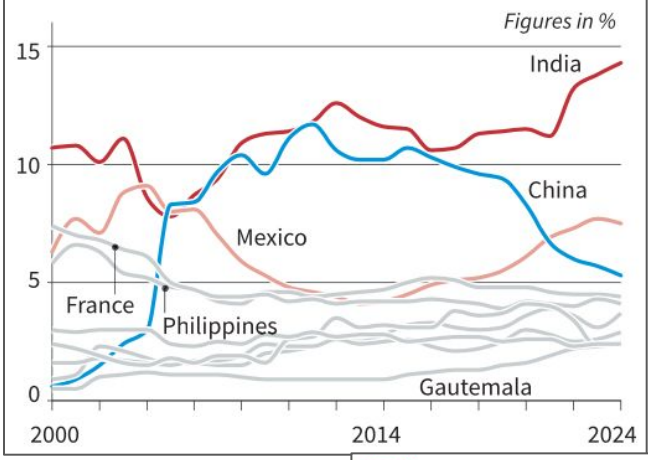
demic years, there has been a rapid increase in its share. India's share in global remittances was twice the share of Mexico's in 2024 (7.5%); Mexico was a distant second.

Chart 1: The chart shows the top 10 receivers of remittances in $ million in 2024 (estimated)



Remittances refer to the money that individuals working abroad send back to support their families in their home country

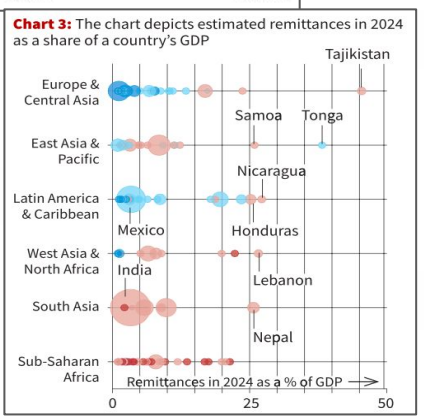
Chart 2: The share of global remittances for the top 10 countries mentioned in Chart 1 in the 2000-2024 period



Though India leads in absolute remittance inflows, in some economies, remittances play a more critical role in funding current account deficits and fiscal shortfalls. To better understand this, **Chart 3** depicts estimated remittances in 2024 as a share of a country's GDP. Each circle is a country. The farther the circle is to the right, the higher the remittance in 2024 as a share of GDP. The bigger the circle, the higher the remittance in 2024 in absolute figures.

In Nepal, remittances formed over 25% of the GDP in 2024. In Tajikistan, Nicaragua, Lebanon, Samoa, Honduras, and Tonga, the share of remittances in 2024 formed over 25% of their respectives GDPs. In India, remittances formed 3.3% of the GDP this year.

Chart 3: The chart depicts estimated remittances in 2024 as a share of a country's GDP



In Nepal, remittances formed over 25% of the GDP in 2024. In Tajikistan, Nicaragua, Lebanon, Samoa, Honduras, and Tonga, the share of remittances in 2024 formed over 25% of their respectives GDPs. In India, remittances formed 3.3% of the GDP this year.
For many low-and middle-income countries, remittances act as a major source of income. ~~In 2024,~~

In Nepal, remittances formed over 25% of the GDP in 2024. In Tajikistan, Nicaragua, Lebanon, Samoa, Honduras, and Tonga, the share of remittances in 2024 formed over 25% of their respectives GDPs. In India, remittances formed 3.3% of the GDP this year.
For many low-and middle-income countries, remittances act as a major source of income. ~~In 2024,~~

The Analyst Handout

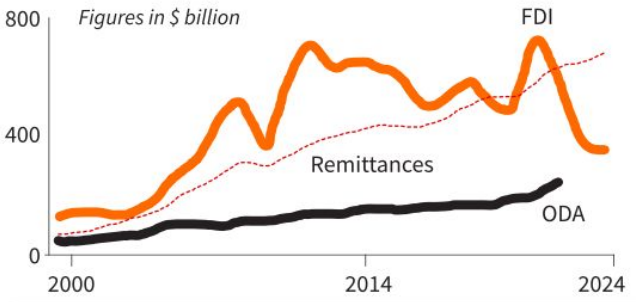
25th December 2024

India's share highest in Global Remittances

SYLLABUS : GS 2: Diaspora **GS 3:** Remittances, Indian Economy
Newspaper : The Hindu **Page No :** 13

In recent years, remittances have even surpassed Foreign Direct Investment (FDI) in low-and middle-income countries put together. FDIs are investments by a foreign country to control or run a business in another country. Remittances are also much higher than the official development assistance (ODA) received by these countries. ODA is the aid from rich countries to help poorer ones develop, often through grants or cheap loans. **Chart 4** compares remittances, FDI, and ODA received by low-and middle-income countries between 2000 and 2024. Over the past decade, remittances increased by 57% while FDI declined by 41% in low-and middle-income nations, the blog notes.

Chart 4: Chart compares remittances, FDI, and ODA received by low-and middle-income countries



FDIs are investments by a foreign country to control or run a business in another country.
ODA is the aid from rich countries to help poorer ones develop, often through grants or cheap loans

The Analyst Handout

25th December 2024

'Myth of Meritocracy'

SYLLABUS : GS 2: Vulnerable & Marginalised Sections

Newspaper : The Hindu **Page No :** 12

India's IT sector is one of the fastest growing industries in the country, contributing over 7% to India's GDP, so much so that the sub-Saharan African countries look to follow its lessons to replicate India's success in software exports. The performance-driven and high-paying nature of jobs in the IT sector make it a preferred career destination for millions of Indian youth. The job market in this industry is often touted as the epitome of skill-based meritocracy and inclusivity, with the social backgrounds of candidates playing no role in their hiring.

~~different reality~~. Analysis by the writers of this article based on household surveys by the National Sample Survey Office (NSSO) unravels stark caste-based disparities in employment probabilities and wage earnings in the IT industry, indicating that social inequalities are significantly alive in the job market.

The study utilises two rounds of NSSO surveys: NSS 78th (2020-21) and NSS 68th rounds (2011-12), which are representative at the national level. The study's sample comprises 29,289 individuals,

The study finds that the probability of Scheduled Castes (SC) and Scheduled Tribes (ST) to be engaged in the IT sector is only 10% in comparison to upper castes (27%). ~~The finding~~

Surprisingly, this disparity in employment probabilities has increased over time from 2011-12 to 2020-21, ~~though both caste groups were at a relatively disadvantaged position in the first time period than the later period~~. In 2011-12, lower caste groups faced only 6% probability of being engaged in the IT sector as compared to 17% for upper castes. ~~Thus, while the overall employment probabilities for engagement in the IT sector increased for both caste groups, the deficit of lower castes went up from 11% in 2011-12 to 17% in 2020-21.~~ This suggests that as the IT sector grows, it fails to address or even acknowledge the social barriers that exclude marginalised groups.

The study also reveals that even when lower caste groups manage to enter the IT job market, they face labour segmentation as reflected in caste-based disparities in wage earnings. SC and Other Backward Classes workers in the IT sector face negative wage differentials of 24.9% and 22.5%, respectively, as compared to upper caste workers, ~~even after accounting for differences in~~

These findings align with the labour market segmentation theory, which predicts a division of the labour market into dualistic segments (lower and upper labour segments), with workers in the lower segment facing structural barriers in upward mobility. ~~The findings indicate that lower castes are relegated to the lower segments of the job market~~, facing limited returns to private investments in education and skills.

Gender inequality

The labour market disparities in IT also affect other vulnerable sections, especially women.

Female workers in IT earn 26.2% lower than males, irrespective of their caste, though their employment probabilities are closer to that of men. Labour market segmentation, particularly in a high-growth and high-paying sector such as IT, has far-reaching socio-economic implications. By systematically excluding a significant portion of the population, the industry not only sacrifices economic efficiency but also undermines social justice.

Diversity in the workplace is widely seen as an important source of comparative advantage. According to a report by the International Labour Organization in 2022, higher levels of diversity at the workplace are associated with greater productivity and innovations. The Network for Business Sustainability (in Canada) reported that each 1% increase in racial diversity in upper and lower management is associated with a yearly firm productivity gain between $729 and $1,590 per worker. Yet, the Indian IT sector's reluctance to embrace true diversity risks stifling its potential for sustainable growth. Further, it discourages the marginalised sections from investing in skill development, trapping them in a vicious circle of poverty.

The policy steps needed

Several policy steps are needed to address these inequalities. First, all companies should be required to publicly disclose their workforce diversity matrix, and make it public on their website. Such transparency can encourage accountability and motivate employers to prioritise diversity, without imposing specific quotas. Second, lower-caste entrepreneurs should be provided with greater incentives and training for entrepreneurship in high productivity sectors to boost their economic participation. Finally, bridging the skill gap among the marginalised sections can pave the way for a more equitable and inclusive job market.

The **National Sample Survey Office (NSSO)** is a key organization in India responsible for conducting large-scale sample surveys to collect data on various socio-economic aspects. It operates under the **Ministry of Statistics and Programme Implementation (MoSPI)** and plays a vital role in providing reliable and comprehensive statistics for policymaking and research.

Key Features of NSSO:

1. **Establishment**: The NSSO was established in **1950** to conduct nationwide surveys on socio-economic and demographic issues.
2. **Functionality**: The NSSO is tasked with:
   - Collecting data on employment, unemployment, consumption, poverty, literacy, and health.
   - Conducting agricultural surveys and rural-urban household studies.
   - Publishing periodic reports such as the Employment-Unemployment Survey, Consumer Expenditure Survey, and others.
3. **Surveys Conducted**:
   - **Consumer Expenditure Survey**: Provides data on household expenditure patterns, useful for poverty estimation.
   - **Employment-Unemployment Survey**: Assesses labor market trends.
   - **Health and Morbidity Survey**: Collects data on public health issues.
   - **Agricultural Statistics**: Captures data on crop yield, land use, etc.
4. **Merger into NSO**: In **2019**, the NSSO was merged with the **Central Statistics Office (CSO)** to form the **National Statistical Office (NSO)**. This reorganization aimed to streamline data collection and processing.

5. **Significance**:
   - Provides evidence-based data critical for planning and implementing government programs.
   - Acts as a basis for academic research and economic policy formulation.

The Analyst Handout

25th December 2024

Regenerative Farming

SYLLABUS : **GS 3 :** Agriculture
Newspaper : Indian Express **Page No :** 15

INDIA, WITH A population of 145 crore, is self-reliant in its food and nutritional requirements. Over the last 70 years, this has been achieved partly by expanding the area under agriculture and intensifying practices largely during the green revolution. With an annual increase in demand of 2-3 per cent for food, India must grow 50 per cent more food by 2050.

India is likely to fall short of this food demand by 2050. To continue with the current regime of intensive agriculture — which relies heavily on chemical fertilisers that have led to the decline in soil health to alarming levels — is not an option. Sole reliance on synthetic fertilisers over the past six decades has reduced the soil organic carbon content from a healthy national average of 2.4 per cent in 1947 to merely 0.4 per cent today. This is alarming and well below the threshold of 1.5 per cent, which is essential for maintaining soil's arable properties. Not only has it affected the prospects of food security, but it has also cost India a huge sum of Rs 47.7 lakh crore over the last 70 years ($564 billion), amounting to Rs 68,243 crore per year ($8.06 billion) in lost carbon value.

A recent State of the Food and Agriculture report by the United Nations Food and Agriculture Organisation (FAO) highlights the growing social, health, and environmental costs of global agriculture and food systems. These costs total $12 trillion annually. While the current ways of producing can fulfil the calorific requirements of more than 8 billion people worldwide, it yields a massive cost to our society and the environment. The FAO report states that the Indian agrifood system has hidden costs that include damages to health, environment, and society.

These costs are in addition to the current Rs 2 lakh crore per year ($25 billion) subsidy to the fertiliser industry. Synthetic fertilisers also cause about 25 million tonnes of greenhouse gas emissions (CO_2e), costing Rs 14,813 crore per year ($1.75 billion). These subsidies support the wasteful use of synthetic fertilisers that directly reduce soil organic content, generate enormous greenhouse gas emissions and seriously risk India's food, nutritional, and ecological security.

Due to this loss of soil health, the response ratio of fertilisers has declined from 12.1 kg of grain per kg NPK (Nitrogen, Phosphorus and Potassium) in 1960-69 to a mere 5.1 kg grain per kg NPK in 2010-17. If such trends continue, India could face food shortages as early as 2035, partly due to an increase in food demand by a growing population, productivity losses due to climatic impacts, loss of soil health and declining response to synthetic fertilisers. Indian agriculture cannot succeed if soil health fails.

India must, therefore, seek a climate-resilient, nature-based, alternative agriculture model that reduces the risks associated with intensive agriculture, improves the productivity and the livelihoods of farmers, while respecting planetary boundaries, and not damage human health. India needs to mainstream such agriculture to ensure its food, nutritional and ecological security.

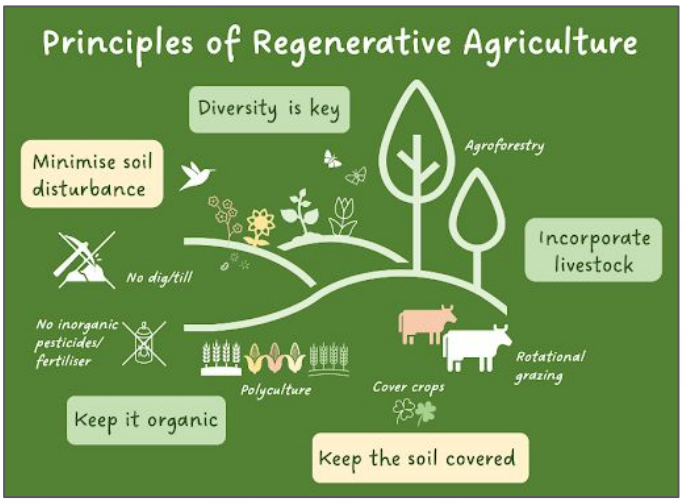
The Prime Minister's National Mission on Natural Farming to safeguard Indian agriculture stands against these risks. We need to fully appreciate the value created by sustainable agriculture practices. Regenerative farming based on the principles of agroecology can help reduce input costs, improve soil health, promote judicious use of groundwater, reduce the depletion of natural resources, and, at the same time, increase farm productivity and profits. One recent study found that community-managed natural farming also improved the health of farmers, farm workers, their families, and consumers by successfully building social capital in rural India.

Based on such evidence, India must redesign its agriculture to sustain its food, nutritional and ecological security. It is possible by identifying and scaling up systems that utilise ecological intensification, such as natural or regenerative farming.

The proponents of the currently dominant agricultural practices continue to rely on synthetic inputs in farming systems and promote sustainable intensification instead. While sustainable intensification involves increasing productivity per unit area by utilising inputs more efficiently, ecological intensification is the only promising way to mitigate the risks to Indian agriculture. It also includes increasing efficiencies of agricultural inputs and partially replacing non-renewable resources such as synthetic pesticides and fertilisers with renewable resources such as ecosystem services based on biological pest control, nutrient cycling, enhancing soil health, and improving biodiversity.

A redesign of agriculture in India needs to focus on radical transformation by adopting regenerative farming and not relying merely on managing the existing intensive system, understanding and practising agroecological principles, enhancing social capital and relying on knowledge-intensive systems, which are supported by participatory and decentralised pedagogies.

Intensive and longitudinal field research across all 15 agro-climatic zones in the country will only be able to scientifically establish the true benefits of regenerative farming and generate the necessary evidence, raising awareness at the local and national levels about climate resilience and the health and environmental impact of regenerative agriculture. The ground-level evidence, placed in the public domain, will help create the political will and policy framework leading to the development of a scale-up model for the uptake of regenerative farming across India. It will also contribute to the country's vision of achieving "net zero status" by 2070.



राष्ट्रीय मिशन प्राकृतिक खेती प्रबंधन एवं ज्ञान पोर्टल
NATIONAL MISSION ON NATURAL FARMING MANAGEMENT AND KNOWLEDGE PORTAL

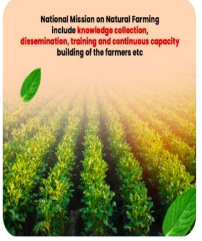
Vision

To implement self-sustainable and self-generating natural farming systems for freedom from purchased inputs with the aim to cut down on cost of cultivation, enhance farmers income and ensure resource conservation and safe & healthy soils, environment and food.

Mission

National Mission on Natural farming aims at creating institutional capacities for documentation and dissemination of best practices, make practicing farmers as partners in promotion strategy, ensure capacity building and continuous handholding and finally attracting farmers to the natural farming willingly on the merit of the system.

1. To promote alternative system of farming for freedom from external purchased inputs, cost reduction and thereby increasing income of farmers.
2. To popularize integrated agriculture-animal husbandry models based on livestock and local resources.
3. To collect, validate and document Natural Farming being practiced across country and encourage participatory research with farmers on up-scaling of the mission.
4. To undertake activities for awareness creation, capacity building, promotion and demonstration of Natural Farming.
5. To create standards, certification procedure and branding for Natural Farming products.



The Analyst Handout

25th December 2024

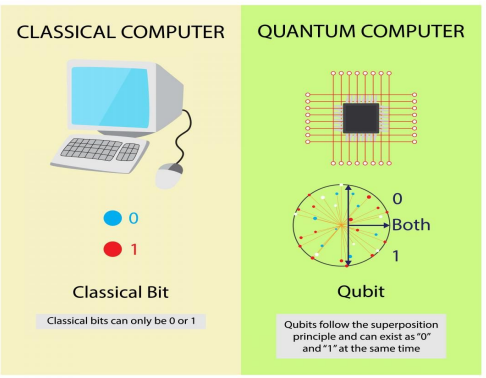
What is Quantum Computing?

SYLLABUS : GS 3: Science & Technology
Newspaper : The Hindu **Page No :** 14

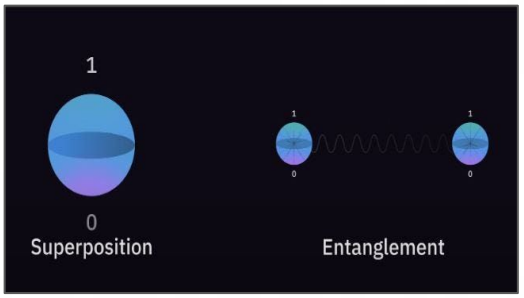
Quantum computers are the talk of computer town. Their potential to solve complex problems much faster than classical computers is an intriguing proposition that stands to transform several industries. A quantum computer is based on the principles of quantum mechanics, an area of physics that deals with the smallest particles in the universe. In 1982, Richard Feynman proposed the idea of developing a computer that could simulate both quantum and classical physics but researchers realised classical computers, the computers of today, would struggle with the complexity of quantum systems. Thus the idea of a quantum computer was born.

What are the basics of quantum computing?

Classical computers work on the principles of classical physics. Their fundamental computing unit is the bit. Each bit represents one piece of information with two possible values, 0 or 1. It's possible to represent all types of information as a combination of 0s and 1s using the binary system.



Quantum computers rely on quantum bits, or qubits, to perform computations. Unlike classical bits, qubits can exist in the states 0, 1 or in a state that's partly 0 and partly 1. 'State' refers to all the possible values the qubit can have.



The ability of qubits to be in two states is known as superposition. It's one of two fundamental principles that animate quantum computers. Imagine a spinning coin: while it's spinning, it can be both heads or tails, and it isn't until the coin collapses that you can see which it is. A qubit is like a spinning coin that holds both values simultaneously.

~~When a qubit is measured, it collapses to one of the values, 0 or 1. This means~~ while a classical bit holds one unit of information, a qubit can hold two. Because of this, quantum computers can perform multiple computations simultaneously, ~~with the measurement revealing one of the possible outcomes of the computations.~~

The instantaneous correlation between qubits speeds up computations that would take far longer with classical computers.

Superposition and entanglement are exclusive to quantum mechanics and central to the potential that quantum computers have to offer.

The second fundamental principle upon which quantum computers are based is called entanglement. This phenomenon allows qubits to be intrinsically linked no matter how far apart they physically are. Measuring the state of one of the qubits will immediately yield information about the state of the other. ~~Say you have a pair of gloves. Each~~ ~~it.~~ But using Shor's algorithm, a quantum computer could quickly get the key and open the locks.

Quantum computers are technologically superior but this doesn't automatically mean they will be better than classical computers at all tasks. Over the years, experts have developed specific tasks that prove quantum computers are capable of greater feats.

In 1994, Bell Labs computer scientist Peter Shor created the Shor's algorithm. It could find the factors of large numbers in moments rather than the millions of years required by classical computers. This has major implications for data security. Current methods to secure data involve locking the data and hiding the key in the solution of a difficult mathematical problem.

The state of quantum computing has come a long way since. In 2019, for example, IBM unveiled the world's first circuit-based commercial quantum computer, Q System One. Circuit-based designs are believed to be the most versatile for general quantum-computing applications. ~~Q System One uses circuits~~

In the same year, researchers at Google reported in a paper in *Nature* that their 53-qubit 'Sycamore' processor had achieved quantum supremacy: when it can solve a problem that would take classical computers an unreasonable amount of time. The paper claimed Sycamore completed a task in 200 seconds that would have taken a supercomputer 10,000 years.

Earlier this month, Google unveiled a quantum chip called Willow, purportedly the world's first quantum processor in which error-corrected qubits improve as they scale. Quantum states are easily prone to errors due to interactions with the environment, so quantum computers need error correction to hold information long enough to perform useful calculations with them.

Willow, Google has said, can finish a standard test in five minutes whereas the same calculation could take today's best supercomputers 10 trillion trillion years.

What are the present limitations?

The advancements are flying thick and fast but there are still many significant challenges to overcome before quantum computers can become commonplace.

The chief concern is that building quantum computers remains expensive and complex. Keeping many qubits stable is also difficult because of error rates and decoherence (when a qubit loses superposition because of noise from its surroundings). The problems for which we really need quantum computers – like discovering new drugs or cracking mysteries in astronomy – also require millions of qubits.

All said, their potential to be useful is clear. This is why India launched the National Quantum Mission in 2023. The government has set aside ₹6,000 crore for the mission to be spent over eight years, among other things to develop quantum computers.

The Analyst Handout

25th December 2024

EC's Election Rule Amendment

SYLLABUS : GS 2 : Elections
Newspaper : The Hindu **Page No :** 14

Sreeparna Chakrabarty

The story so far:

The Centre on December 20 amended the Conduct of Election Rules to restrict access for the public to a section of poll documents. This was done by the Union Law Ministry following a recommendation from the Election Commission (EC). While the EC said the amendment aims to restrict access to electronic data, the Opposition and transparency activists have been up in arms, branding it as an attack on the right to information and electoral freedom.

What is the Conduct of Election Rules?

The Conduct of Election Rules,1961, is a set of rules which provide for provisions on how to conduct the elections as per the Representation of People Act.

What is the amendment?

This amendment was brought into effect through a notification issued by the Ministry of Law and Justice on December 20. Rule 93(2)(a) of the 1961 Conduct of Election Rules had earlier stated that "all other papers relating to the election shall be open to public inspection" but after the amendment, it reads, "all other papers as specified in these rules relating to the election shall be open to public inspection."

Why has the amendment been brought in now?

The move comes after a recent direction to the EC by the Punjab and Haryana High Court to share all documents related to the Haryana Assembly election, including treating CCTV footage also as permissible under Rule 93(2) of the Conduct of Election Rules, to petitioner Mahmoud Pracha.

According to a senior official of the EC, "The rule mentioned election papers. The election papers and documents does not specifically refer to electronic records. In order to remove this ambiguity and considering the serious issue of violation of secrecy of vote and potential misuse of CCTV footage of inside the polling station using artificial intelligence by a single person, the rule has been amended. The EC argues that sharing of CCTV footage may have serious repercussions, especially in sensitive areas where secrecy is important. All election papers and documents are otherwise available for public inspection."

Why are the transparency activists protesting?

According to transparency activist Anjali Bharadwaj, Rule 93 is akin to the Right to Information Act as far as elections are concerned and, any change hurts the citizen's right to know about the process.

Venkatesh Nayak, Director Commonwealth Human Rights Initiative explained further that "upon initial examination, the amendment appears to be aimed at restricting citizen-voters' right to access a large number of documents created during Parliamentary

He said that given the controversy about voter turnout in recent Lok Sabha and Assembly polls, access to the Presiding Officers' diaries which contain detailed data about voter turnout and the number of tokens they distribute to voters who are in the queue at the hour scheduled for closing of polling are not mentioned specifically in the Conduct of Election Rules. "The amendment seeks to prevent access to such documents and many other reports and returns that are filed by various election officials".

What does the Opposition say?

The Congress claimed that a change in rules regarding the conduct of elections vindicated their assertions regarding the rapidly eroding integrity of the electoral process managed by the EC.

The Congress moved the Supreme Court against the amendments on Tuesday.

The Analyst Handout

25th December 2024

Daily Quiz

Q1. Which of the following government initiatives and schemes are related to the welfare of gig workers?

1) The Code on Social Security, 2020
2) The e-Shram Portal
3) The Pradhan Mantri Shram Yogi Maandhan (PMSYM)
4) Skill India and Digital India Initiatives

Select the correct answer using the code given below:

a) 1, 2 and 3 only
b) 2, 3 and 4 only
c) 1, 3 and 4 only
d) All of the above

Answer: d

Q2. Consider the following statements :

1) Digital computers process information using binary bits (0 or 1), whereas quantum computers use quantum bits (qubits).
2) Quantum computers are significantly faster than digital computers for all computations, including basic arithmetic operations.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Answer: c

Q3. Which of the following arrangements shows the correct decreasing order of the remittances received by different countries in 2024?

a) India>Mexico>China>Philippines>Pakistan
b) India>China>Mexico>Philippines>Pakistan
c) China>India>Mexico>Philippines>Pakistan
d) Mexico>India>China>Philippines>Pakistan

Answer: a

Q4: Consider the following statements regarding the National Sample Survey Office (NSSO):

1) The NSSO was established in 1991 with the primary aim to provide a statistical basis for economic planning and policy formulation.
2) The NSSO is an agency under the Ministry of Statistics and Programme Implementation (MoSPI) of the Government of India.
3) The primary function of NSSO is to conduct large-scale surveys on issues related to national income and poverty levels, among others.

Which of the statements given above are correct?

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

Answer: c

Q5: Which of the following is NOT a principle of regenerative agriculture?

a) Maximise Soil Disturbance
b) Rebuilding Organic Matter and Soil Fertility
c) Integrating Livestock and Animals
d) Use of Agroecological Practices

Answer: a

VAJIRAM & RAVI

Institute for IAS Examination

A unit of Vajiram & Ravi IAS Study Centre LLP

9-B, Bada Bazar Marg, Old Rajinder Nagar,
New Delhi - 110060 • Ph.: 41007400, 41007500

New No. 62, P Block, 6th Avenue, Anna Nagar,
Chennai - 600040 • Ph.: 044-4330-2121
Visit us at : www.vajiramandravi.com