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India-Australia changing relations

Context-

The editorial focusses on the changing relations between India and Australia. The engagement on both sides has amplified across multiple platforms and sectors, clearly focused on building tangible commitments and actions, to embrace a win-win partnership between the two.

Syllabus- Recent developments in Indian Foreign policy [Paper 2-B]

> If 2020 was the year of elevation of Australia–India bilateral ties to a Comprehensive Strategic Partnership (CSP), 2021 was about bringing pace, energy, and solidifying the bilateral economic engagement, 2022 is surely about a focused head start to script a new and committed engagement narrative, and the recent moths have been a busy and promising month for bilateral ties.

Changing conditions-

- The dynamic global geostrategic and geoeconomics landscape is intensifying competition and redefining power, principles, and values on which the regional order should be based.
- **Impact of COVID**- The apparent barriers of the COVID pandemic have created a new kind of catalyst for greater connectivity, cooperation, and co-existence.
- **Indo-Pacific region**- The vast Indo-Pacific region that comprises at least "38 countries, share 44 percent of world surface area, is home to more than 64 percent of the world's population, accounts for 62 percent of global GDP with more than 50 percent of global trade traversing through its waters, highly heterogeneous with countries at different levels of development, all connected by a common thread of 'the ocean', is emerging as the new pivot to power."

Australia's recent moves towards India-

- **QUAD Dialogue**- Australia welcomed India's Minister for External Affairs, Dr S Jaishankar, for the Quadrilateral Security Dialogue (Quad) along with other group members, Japan and the USA, reiterating their support for a free and open Indo-Pacific.
- **HADR in QUAD**- The Quad agreed to "accelerate the delivery of COVID-19 vaccines across the region, address regional challenges including humanitarian assistance and disaster response (HADR), maritime security, counterterrorism, countering disinformation and cyber security."
- **Energy Supply Chain Forum**- Australia has also proposed to host an Indo-Pacific Clean Energy Supply Chain Forum in mid-2022.
- **Maritime advancement**- Australia will provide AUD$36.5 million over five years, including AUD $11.4 million to improve regional cooperation on maritime shipping, disaster resilience, and information sharing.

- **Infrastructure investment-** The Australian government will invest AUD$5.8 million to promote infrastructure investment opportunities in the region to Australian business, invest AUD$4.8 million to improve Australian resources and mining equipment, technology and services (METS), and understanding of South Asian markets.
- **LNG supply chain**- A further AUD$4.3 million will support relationships across the LNG supply chain between Australia, India, and Bangladesh.

Together, these measures will support opportunities for trade, investment, and connectivity in the Northeast Indian Ocean.

India-Australia in Cyber security field-

- **Emerging areas of co-operation**- With the advent of industry 4.0, cyber security, innovation, digital economy, and cyber & critical technology cooperation have become a key part of Australia's relationship with India
- **Centre of Excellence for Critical and Emerging Technology**- It has enabled an ecosystem of collaboration between industry, academia, and subject matter experts through the New Centre of Excellence for Critical and Emerging Technology Policy to build security standards, best practices, and ethical framework.
- **Cyber Dialogue**- The inaugural Australia–India Foreign minister's Cyber Dialogue focused on further promoting stronger investment opportunities and cutting-edge innovation in cyber, critical, and emerging technologies.

What is the meaning of CECA for India and Australia?

- A full-fledged CECA can become a reality between the two very soon.
- **Lower tariff and greater access-** The CECA is likely to lower tariffs and provide greater access to Australian and Indian exporters in areas such as textiles, pharmaceuticals, footwear, dairy products, milk, premium wines and many more, focused on post-COVID economic recovery, along with the importance of an early resolution of ongoing issue of taxation of offshore income of Indian firms in Australia.
- **Sign that India is open to global trade**- India's attempt to revive trade talks with Australia, as well as the EU, UK, and US, and its signing of Free Trade Agreement with UAE, eyeing USD$100 billion trade in the next five years, emphasises its willingness to keep itself open to global trade— that will determine the degree to which it can attract investments, drive exports, make domestic industries competitive and incentivise other countries to manufacture in India.

NOTE- India aims to achieve 5 percent share in world merchandise exports and 7 percent in services exports by 2025, which currently stands at 1.67 percent in global merchandise exports, and 3.54 percent in services.

Co-operation in Tourism-

- **MoU on Tourism Cooperation**- Both countries have also renewed their commitment through an MoU on Tourism Cooperation, enabling tourism operators on both sides to take advantage of Australia's international border re-opening to all fully vaccinated eligible visa holders, including tourists and business travelers.
- **Pre-pandemic period-** Pre-pandemic, India was Australia's fastest-growing source of international visitors.
- **Data**- In 2019, almost 400,000 visitors from India visited Australia and spent a combined total of US $1.8 billion.

NOTE- BRAND AUSTRALIA- A large Australian Indian diaspora population and international student cohort with accessible connectivity will continue to open up international travel to a larger proportion of India's population, also a strong enabler in building 'Brand Australia' in India.

India-Australia investment opportunities

- **Australia–India Infrastructure Forum**- Australia and India have launched the Australia–India Infrastructure Forum, that will serve as a hub to promote two-way investment in infrastructure and support broader trade and investment bilateral objectives.
- **New sectors**- Opportunities in urban infrastructure, transport, and water remain key focus sub-sectors for Australia in India.
- **Superannuation fund**- Australia's largest superannuation fund, Australian Super which has over US $200 billions of funds under management, has over a one and a half billion dollars currently invested in India.

Changing social and cultural trends

- **Maitriinitiatives-** To foster the Australia-India community cooperation, creativity, understanding and exchange, Australia has also launched three Maitri (friendship) initiatives with a total investment worth AUD$20.8 million.
- The AUD$11.2 million Maitri Scholarships Programme aims to attract and support high achieving Indian students to study in Australian universities particularly in science, technology, engineering, mathematics, and health.
- **Fellowships Programme**- The AUD$3.5 million Maitri Grants and Fellowships Programme will build links between future leaders, supporting mid-career Australian and Indian professionals to collaborate on strategic research and shared priorities.
- **Maitri Cultural Partnership** - The AUD$6.1 million Australia-India Maitri Cultural Partnership will boost the role of creative industries in economic and people-to-people ties to promote artistic talent and cultural exchanges in visual and performing arts, literature, film, television, and music industries.

NOTE- 'People' are at the center of this bilateral relationship, and exchanges provide a natural advantage of advisory and advocacy by building stronger cultural understanding/intelligence and establishing transnational networks that can be utilized in a big way.

Co-operation in Energy transition

- **4th Australia-India Energy dialogue**- In the fourth Australia India Energy dialogue, both countries have decided to drive down the costs of technologies that will help reduce global emissions, with focus on tangible actions and projects including the manufacture and deployment of ultra-low-cost solar and green hydrogen.
- **Australia's Technology Investment Roadmap**- The initiative is part of Australia's Technology Investment Roadmap where it has committed to support new international partnerships (AUD$565.8 million) and India is the sixth bilateral low emissions technology partnership for Australia, after Germany, Singapore, Japan, the Republic of Korea and the United Kingdom.
- Over 90% of solar cells globally use Australian technology.
- **India's potential in solar technology**- India in the next 10 years, will be one of the largest adopters of solar technology in the world and Australian and Indian innovators have significant potential to work together in this area.
- **Hydrogen sector**- India's National Hydrogen Mission could align well with Australia's advanced technology in the hydrogen industry, as well as with India's emphatic push on green transition in Union Budget 2022.

Conclusion

- The partnership between Australia and India is no longer one-dimensional or single layered, what we are witnessing today is a truly comprehensive bilateral growth story that is driven by consistency, commitment, and action.
- The key is to keep the Australia story thriving in India, and India story thriving in Australia on a consistent basis in public memory; this involves a holistic multi-stakeholder strategy and approach which deepens understanding and appreciation of each other.

3rd aircraft carrier for India

Context-

Talks are on-going in India for the need of the 3rd aircraft carrier for Indian Navy after INS Vikrant and INS Viraat.

Syllabus- India's relation with South Asia and India's self-sufficiency in Defence sector.

Need of Aircraft carrier for India-

- **Operational needs of India in maritime sector-** Given India's naval strength in carrying out diverse operations ranging from providing regional Humanitarian Aid and Disaster Relief (HADR) to engaging in counterpiracy operations in the Gulf of Aden, it is no surprise that maritime practitioners refer to the Indian navy as a powerful blue force in the making.
- **Diverse technologies needed**- These technologies must manifest themselves in both, conventional developments such as destroyers, frigates, submarines, and aircraft carriers, as well as in relatively novel developments such as unmanned marine systems and Artificial Intelligence (AI).
- **Step to India's blue water navy vision-** Step one towards fulfilling India's blue water navy vision would be to acquire and incorporate into the forces, key emerging technologies that can support diverse naval operations and enable greater efficiency in performance.

Discussions around technology in the need of 3ʳᵈ aircraft carrier-

- **EMALS Technology**- In the discussions for the induction of a third aircraft carrier into the Indian Navy, heavy focus is being given to the incorporation of technologies such as the Electromagnetic Air Lift System (EMALS), which was disseminated to India by the US in 2017
- **CATOBAR Technology**- The focus is also on the Catapult Assisted Take-Off but Arrested Recovery (CATOBAR) system used in advanced aircraft carriers for the purpose of 'catapulting' aircrafts (especially heavy-weight fighters) and 'assisting' their landing back on the carrier using arrestor wires.

Existing aircraft carriers for India

- **INS Vikrant**- original INS Vikrant was commissioned in 1961- INS Vikrant also knowns as Indigenous Aircraft Carrier or IAC-1, has been indigenously developed at the Cochin Shipyard Limited and has completed its third sea trials in January, using a STOBAR (Short Take-Off by Arrested Recovery) system.
- The **indigenous INS Vikrant** is expected to be commissioned in 2022.
- **INS Viraat-** commissioned in 1987- presently decommissioned
- At present, India has only one aircraft carrier, the **INS Vikramaditya**, which is a Russian-origin platform.

Does India need a third aircraft carrier?

- There is a broad consensus in the strategic community on the Indian Navy having two aircraft carriers, one for each of the two seaboards.
- **To ensure operational efficiency**- There also exists a broad consensus on acquiring a third carrier to ensure the operational availability of two aircraft carriers at any given time, accounting for maintenance, repairs and refits.

- **Debate on timing**- The debate, therefore, revolves around the timing of the acquisition of a third carrier, whether now or later.

Need of Aircraft carriers in improving relations with others-

- **Not just for military**- For India, its aircraft carriers are more than just a tool for military muscle flexing in the Indo-Pacific–they act as cheaper alternatives to overseas military bases and guarantee that in conflict situations, fighter aircrafts and long-range surveillance would be available on-ground.
- In doing so, aircraft carriers fulfil the timely combat requirements that shore-based assets cannot.
- **Growing needs-** In the words of the former Indian Chief of Naval Staff Admiral Karambir Singh, for India, "Air power at sea is required here and now".
- **BrahMos on carriers**- Indian carriers are also equipped with the BrahMos supersonic anti-ship missile (with a 292-km range), enabling them to carry out sophisticated sea-to-land precision attacks.

What can be the importance of nuclear-powered aircraft carriers-

- **Renewable and long-lasting**- Aircraft carriers powered by nuclear energy and assisted by logistical escort vessels to sustain the needs of crew on deck, can truly transform the narrative of establishing a blue water navy by functionalizing a renewable, long-lasting, and self-sustainable source of energy to keep the carrier moving for over 10-20 years, with a 50-year lifespan in total.
- **No need of RCOH**- A nuclear-powered aircraft carrier may still appear on shore only to restock its fridges, but not to undergo the lengthy Refueling and Complex Overhaul (RCOH) processes that aviation-fuel powered aircraft carriers would require.
- N-powered carriers need RCOH only once in their mid-life stage (at up to 25 years after being commissioned).

Conclusion

- In the long run, however, the operationalisation of a third aircraft carrier will be useful.
- Enhancing indigenous development capabilities can help lower acquisition costs, while installation of a hybrid Electric propulsion-CATOBAR system can provide an edge largely as significant as that provided by a nuclear-powered carrier.

De-escalation of tensions in South-China Sea

Context-

Beijing on 1 March completed another military drill in a radius of six nautical miles in the South China Sea in what has become a usual and quite frequent routine of drills and counter-drills, military exercises, overflight entry into sovereign air space, etc., followed by an exchange of censures and warnings.

Syllabus- India and South Asia- India's "Look East" policy

> If China is to be deterred from taking a leaf out of Moscow's playbook in the near future, then the existing international maritime legal regime needs to be made more robust and inviolable.

Rising tensions in South-China sea-

- **Rising territorial claims**- The South China Sea has witnessed an intensification of turmoil over competing maritime territorial claims over the past decade as China adopts an increasingly assertive stance with respect to its maritime claims.
- **Militarization of Indo-Pacific**- This has resulted in the maritime space of the Indo-Pacific, particularly the South China Sea, in becoming more militarized and by extension, a potential flashpoint.
- **International law vs historical claims**- At the heart of the matter lies divergences over maritime limits as laid out by international law, on the one hand, and historic rights on the other, which in turn leads to differences in understanding the constituent elements of sovereignty and its distinction from sovereign rights.

China's claims-

- **Sovereign rights**- China gradually seeks to expand the ambit of what it considers its "sovereign rights", and it, in turn, has challenged the "sovereignty" of other littoral countries.
- **Paracel islands**- China lays claim to nearly all of the South China Sea, including the Paracel Islands. However, Taiwan, Philippines, Brunei, Malaysia and Vietnam also claim parts of the region, believed to hold valuable oil and gas deposits.
- **Domestic vs international law**- There has been huge differences between international maritime law and China's domestic legal understanding of its authority lies as China does not cohere with international legal definitions.

- ✓ For Beijing, the South China Sea is its adjacent and relevant waters.

✓ However, neither are legal terms identified by international law.
✓ China's own legal maritime understanding is consequently an automatic extension of its 'historical rights' over the maritime space of the South China Sea.

Reasons for China's claims-

Beijing's progressive inroads are largely for two popularly cited reasons-

1. **Diversifying energy needs**- First, to diversify its sources of acquiring energy as the South China Sea holds an estimated 190 trillion cubic feet of natural gas and 11 billion barrels of oil in proved and probable reserves along with potentially undiscovered hydrocarbon reserves;
2. **To exert influence**- Second, to exercise influence over the busy Sea Lines of Communication (SLOCs) that pass through these waters and, thereby, ensure maritime commercial and naval access towards the Indian and Pacific oceans.
★ **Claiming historical rights**- In addition to these reasons, China also claims historical rights over the South China Sea and, therefore, control over these waters is a crucial element as far as the Chinese Communist Party's national aspirations for domestic politics and perception are concerned.
★ **Trying to control the maritime routes-** China's determined projection of control in the area, primarily by establishing physical presence in the many small islands, shoals, atolls, and other rock formations that dot the South China Sea has been steadily expanding over the past decade.
★ **Salami Slicing strategy**- Referred to as the "salami slicing" strategy, this leads to a constant state of competition which, over time, has had a debilitating impact on resources and regional stability.

What has been the response of other powers?

• The responses of littorals as well as external powers—US, Japan, Australia—have been largely episodic and **reactive** in nature.
• **China is the instigator**- Whilst Beijing is often the principal instigator of tensions, for instance, by marking the Nine-dash line, creating artificial islands, initiating the new coast guard law, and increasing its maritime militia, etc., other littoral countries too have engaged in similar activates though on a much smaller scale.
• **USA' response**- The USA has argued that such exercises are in line with international law and help defend the right of passage through the region amid competing claims by China and other governments. It is in sync with the USA's continuous efforts to counter China's assertion in SCS. Recently the USA Navy sent an aircraft carrier group into the South China Sea.

Why and when China started claiming it as "Sovereign rights"?

- **Claims as part of EEZ**- The phrase 'sovereign rights' began to be unsystematically used in international maritime law since the 1970s to govern the rights of coastal states over resources in the continental shelf and the Exclusive Economic Zone (EEZ).
- Since the 1990s, the term has also been associated with reference to determining sovereign rights over energy resources.
- **Does this grant the claim to China?**- However, possessing sovereign rights over resources in the EEZ does not confer sovereignty over the same territory. Thus, the sovereign rights of a coastal state towards the exploitation of resources in the EEZ and the continental shelf is not equivalent to the exercise of sovereignty over the area.

Need of practicable solutions

- **Rising ambiguities**- The periodic tension in the South China Sea over competing and overlapping claims has made the issue an extremely complicated one. On the other hand, it has also highlighted the ambiguities in interpreting the existing maritime legal order with reference to contravention of perceived rights and entitlements which creates the scope for studying, identifying, and mitigating the same.
- **Need of clarity in matters**- Clarity with respect to the difference between sovereignty and sovereign rights would help in unpacking the convoluted problem that is the South China Sea.
- **Sovereignty vs sovereign rights**- There needs to be a thorough and meticulous assessment in the distinction between sovereignty and sovereign rights with respect to the South China Sea maritime space vis-á-vis each littoral state that borders the sea. This would enable the identification of gaps in the existing maritime legal regime, specifically with regard to sovereignty and sovereign rights.
- **Political steps needed**-Necessary political incentives that would put the premium on noncompliance high enough are also required to be put in place to ensure that the international maritime law is adhered to.

Conclusion

- Clarity with respect to the difference between sovereignty and sovereign rights would help in unpacking the convoluted problem that is the South China Sea. It would also lead to a more coherent understanding and appreciation of the political geography of this maritime space.
- In doing so, it would also help in the identification of the bottlenecks in the existing maritime governance framework and, thereby, enable the revisions required to remove the attendant ambiguities.
- Finally, this would allow for the framing of policy-oriented regional strategies which would be better equipped to address such discrepancies in future.

Impact of Ukraine crisis on Indian economy

Context-

FY 2021-22 Q3 growth trajectory of India confirms a downward trend from 20.1% in Q1, 8.4% in Q2 and now 5.4% in Q3. It is expected that Q4 growth may slip to 4-4.5%, which would lead the annual real GDP growth to be around 8-8.5% in 2021-22 [down from 8.95%, that was expected by NSO].

Syllabus- Recent developments in Indian Foreign policy

How calamitous would this be?

- **Reduction in value**- It is a reduction of around INR 1.2 trillion in the NSO estimate of real GDP of INR 147.72 trillion for 2021-22.
- Compare this with INR 10.11 trillion India lost in the previous fiscal 2020-21 (computing GDP loss versus the 2019-20 GDP of 147.9 trillion—the last year prior to the pandemic).
- **Fall in GDP**- The data illustrates that India suffered a dramatic fall of over 24 percent in real GDP in Q1 2020-21 induced by the pandemic dislocations, followed by an immediate correction in the next quarter with the quarter-on-quarter loss in GDP reducing to 7 percent.
- **V-shaped recovery**- Two quarters of low but positive growth followed, inducing the then Chief Economic Advisor to prematurely, declare a V shaped recovery was underway, with a bit of econometric license.
- **Reality in 2022-23**- As we side into a new fiscal 2022-23, we are likely to grapple with the reality that the tagline of a "fast growing" economy still has to be earned.

India quarterly GDO in Rs triion
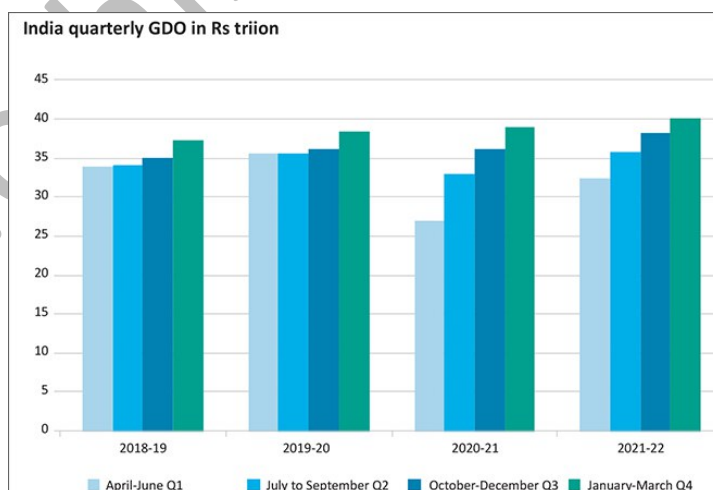
The fiscal consequences of slow growth

- **Fiscal squeeze**- One of the downsides of slow growth is the consequential fiscal squeeze, hampering public investment-led recovery and enhanced income support for the jobless.
- **Lag of growth in last year**- In the first 10 months of the current fiscal (April 2021 to January 2022) revenue receipts and non-debt capital receipts grew by 16 percent—a healthy recovery—but lagging growth in the full year's nominal GDP, forecasted by NSO at 19 percent.
- **Stagnation**- The real problem is a perception of stagnation, which is partly driven by the abnormally high expectations aroused around India's "fast growing" economy.

- **Rising interest payments-** The burden of interest payments increased this fiscal by 19.7 percent over the previous fiscal, albeit with budgeted moderation in the next fiscal (FY 2023) to 15.6 percent.
- **What if Ukraine crisis decreases?** - If the Ukraine crisis blows over, global interest rates will likely harden and the budgeted moderation in the interest burden could erode.
- **What if Ukraine crisis increases?** - Conversely, if the Ukraine crisis persists, and global shocks negatively impact growth and jobs, the US Federal Reserve could defer normalization of interest rates, which would be to India's advantage, as we are further away from normalization than the US. Perversely, we stand to gain from Ukraine's misery.

Ukraine fast forwards the ongoing geopolitical discord

- The unfolding Ukraine crisis has added to global uncertainty and disruption emerging from the pandemic. However, it is also an opportunity.
- **Russia's concerns-** The crisis was perpetuated by indifference to long-standing Russian security concerns of NATO operational creep. President Putin's determination to assert the centrality of his strong leadership to "Imperial" Russia was underestimated, in a year when President Xi is slated to cement his position in "Imperial" China.
- **Ukraine's response-** Ukraine's democratically elected President opted for the high-risk, albeit courageous, strategy of risking a crippling war waged on home ground.

Impact of Ukraine crisis world over-

- **India**- The structural frailties of the Indian economy—inefficient allocation of public and private capital, low levels of competitiveness in the critical financial and infrastructure sectors, low governance standards in the delivery of public services and faltering human development strategies—evident since 2017, need significant reform effort.
- **China**- It suits President Xi too. Russia's intemperate military response at not being taken seriously and now the near deafening pusillanimity in forging a forceful counter-response loudly signals the hollowness of NATO's claims of mutually beneficial deterrence, whilst red-lining the jaded appetite of the United States to suffer the costs—fiscal and human—of global leadership.
- **Taiwan**- The Ukraine crisis also reinforces the inevitability of Taiwan having to seek, cap in hand, an eventual rapprochement with "Imperial" China.

Response of India and China-

- China and India have already signaled their accommodation of Russian security concerns by not supporting the US-promoted UNSC resolution to censor Russia.
- However, continuing to turn a Nelson's eye to a potential massacre in Ukraine, risks inviting negative consequences for Chinese and Indian business and trade relationships in Europe and elsewhere.
- Like NATO, China and India have an interest in defusing the crisis.

Opportunity for global economic leadership

- **Showing leadership**- India can demonstrate its commitment to growth sustaining global action by proposing an UN-sponsored initiative to stabilise global grain and oil prices. The sanctions constrained Ukrainian and Russian supplies of these essentials are already generating a global price shock.
- **Grain's Buffer stock for sale**- India has elevated buffer stocks of food grains, wheat (28 million tons) and rice (26 million tons) in the central pool, which it can offer for sale at globally regulated prices.
- **Oil reserves**- The United States and other OECD countries have substantial strategic oil reserves which could be used similarly to moderate the price of oil, which topped US$111 per barrel (Brent).

Impact- This "food & fuel" global price stability initiative could protect the poorest countries from suffering a price shock in essential goods.

Conclusion-

Since the world is more globalized today, the impacts are likely to have more ripples than that of previous editions of world wars. As Russia is a comparatively larger economy and is a leading supplier of oil, gas, coal and other critical elements, the immediate sanctions imposed by world nations may be difficult for them without finding a substitute.

Crypto policy and India

Context-

Considering the fact India was a late adopter in all the previous phases of the digital revolution – when semiconductors, the internet and smartphones made their mark, there is a need for a change in the thoughts and acceptance for these virtual currencies as they mark India's first step towards entering the new phase of digital revolution.

Syllabus- Evolution of the International Economic System

Evolution-
- The trio of Jandhan, Aadhar, and Mobile access has made digital payments a reality.
- It is evident by the increasing volumes, the wider usage seen across Indian markets, and the consumer socio-economic segments; and most importantly, it cuts across the literacy spectrum.
- Fifteen years ago, we could not have imagined monetary transactions being done without using currency notes or coins or any conventional physical mechanisms like cheque books.
- India has come a long way in reshaping financial access using digital mediums.

Need of safety in digital revolution-

- **Advancement + safety**- The speed of technological and digital advancement, if not matched with adequate safety aspects, could become a supervisory-burden for the global financial regulators.
- **Balancing pros and cons**- The regulators will need to balance the positive outcomes of the emerging technologies, alongside the negative impact, especially if these technologies have a bearing on the markets, and can influence the way fiscal and monetary markets operate.
- **Consumer protection**- The regulators also have a role in ensuring that adequate consumer protection guard-rails are in place; these are equally important as developmental policies for larger socio-economic positive outcomes.

Crypto and concerns

- According to **Dr. T R Shankar [**RBI, Deputy governor]- "We have also seen that cryptocurrencies are not amenable to definition as a currency, asset or commodity; they have no underlying cash flows, they have no intrinsic value; that they are akin to Ponzi schemes, and may be even be worse,".
- But, as the **International Monetary Fund (IMF) blog** mentions, "Many of these entities lack strong operational, governance, and risk practices.
- ✓ Crypto exchanges, for instance, have faced significant disruptions during periods of market turbulence. There are also several high-profile cases of hacking-related thefts of customer funds.
- ✓ So far, these incidents have not had a significant impact on financial stability. However, as crypto assets become more mainstream, their importance in terms of potential implications for the wider economy is set to increase."
- One of the key regulatory concerns is anything that could become a **national security issue.**
- ✓ In this aspect, the regulators fear the misuse of crypto currencies using its anonymity for weakening its anti-money laundering efforts.
- ✓ India, being a part of the Financial Action Task Force (FATF), has to abide by its standards that seek global cooperation between sovereign member nations.

Policy indecision

- **Changing official stance**- The official stand on digital assets has changed considerably over the recent times, from RBI's warning to the public investing in crypto in December 2013, RBI prohibiting its regulated entities in dealing with virtual currencies (in April 2018), the Supreme Court of India overruling RBI's April 2018 circular, to the upcoming bill for Parliamentary approval.
- **Crypto bill, 2021**- "The Cryptocurrency and Regulation of Official Digital Currency Bill of 2021", actually has missed its twists and turns in the Parliamentary debate, and instead is playing it out in the form of media statements and speeches, and undue public speculation.

- **Rising crypto currencies**- With over 10,000 cryptocurrencies in global circulation, and most of them with high volatility of value and trading volumes, global regulators will need to boost their investor safeguard measures, until they either ban them or regulate them tightly.

What is the current status on Crypto's usage?

- **Stance of Indian govt**- Technically, there is neither a ban on the use of cryptocurrencies (or crypto assets) in India, nor a regulation that govern their actual usage.
- **Expectation from crypto bill**- The crypto bill which has been touted for long, and yet is pending across multiple sessions of the Parliament, is expected to "create a facilitative framework for the creation of the official digital currency to be issued by the Reserve Bank of India".
- **Private cryptocurrencies**- This bill will also ban all private cryptocurrencies, except for allowing "for certain exceptions to promote the underlying technology of cryptocurrency and its uses".
- **Taxing digital assets**- India recently decided to tax digital assets like cryptocurrencies and non-fungible tokens (NFT), a 30-percent tax on transfer of such assets as well as a 1-percent tax deduction at source (TDS) on every transaction.
- ✓ This TDS while being low cost that won't create feeling of being expensive transaction would, however, offer the list of those who trade in cryptos.
- The move has triggered a debate on the legality of such assets and whether taxes on them have legitimised them.
- **Is it illegal to have crypto?** - The fact is that it is not illegal now to have crypto assets, however, taxing them does not make them necessarily legal either.
- **Data on crypto investment in India**- It is also important to note the observation that there is no official statistics on the actual crypto investments of individual investors, and therefore, a policy narrative cannot be formed solely on the basis of the arguments claiming "consumer choice of crypto products".
- However, this proposed TDS on digital assets would help in officially collating data on its usage and thereby would form as input to the policy and regulatory framework.

CBDC: The digital rupee

- **Dr. T Rabi Sankar,** Deputy Governor, Reserve Bank of India said in a recent address that "cryptocurrencies are decentralised systems where transactions are authenticated by participants themselves by consensus.
- ✓ They are designed to bypass the financial system and all its controls. They cannot be traced or a confiscated or frozen by governments.
- ✓ They are **anonymous**—transactions are verified, but not the purposes or counterparties of transactions."
- **Budget 2022**- Even in the Union Budget announced recently, it was made clear that the RBI would launch India's Digital Rupee in FY 2023.

- **Will it use blockchain?** - One of the arguments floating in the tech world is that the digital rupee may not use blockchain for this rationale: A blockchain is considered to be a 'permission-less network', with multiple nodes that verify transactions.
- Assumedly, the RBI would want to be in control of the digital rupee, which would then need RBI as the sole-validator of transactions. That would make the digital rupee concept a "permissioned" one, which is anti-blockchain ideology.
- **Need of advancement to make it a success**- To make the digital rupee available to the citizens, the RBI will have to rope in more nodes for handling the transaction volumes. Without this, the digital rupee could remain restricted between the RBI and the banks, which does not solve for anything!

Conclusion

This crypto policy and regulation debate has seen surges of overt-optimism as well as cynical suspicions. It has seen exuberance to develop a law which by now has supposedly seen many changes in its draft version, and never been placed in public domain for any feedback. Hopefully, this topic of 'crypto-legality' will be put to rest with a policy decision soon.

Building responsible AI

Context-

With rising technological advancements in the field of Artificial intelligence, the need of better regulatory mechanisms and taking responsibilities of its safe usage has also grown up.

Syllabus- Contemporary Global Concerns

> ## Command and control regulation-
> - When markets become dysfunctional, some form of intervention becomes critical to reinstate the legitimacy of laissez-faire economics and restore public trust in government.
> - Historically, this intervention has often taken the form of statutory regulation, authorising the government to command regulatees to achieve a specified regulatory outcome through certain prescribed means, and issuing sanctions against non-compliance.
> - Most environmental protection laws fall under the category of this command-and-control (CAC) style of regulation.

Government-led industry self-regulation is then proposed as an alternative regulatory approach to harness opportunities for AI-enabled productivity gains and public benefit, while also addressing critical public safety concerns around AI adoption.

Why CAC regulations can't keep up?

- **Compliance obligations**- The CAC regulations typically end up prescribing significant compliance obligations on regulatees while also demanding the creation of brand-new enforcement and compliance monitoring mechanisms that could significantly burden the public exchequer.
- **Need to properly define**- Therefore, CAC regulators must exercise great caution in defining the subject and scope of regulation with due precision to avoid under- or over-regulation, and in a manner that is clearly comprehensible to both regulatory authorities and regulatees to ensure satisfactory compliance.
- **Proper understanding**- To credibly do so, CAC regulators must demonstrate an accurate understanding of what they are seeking to regulate, and the competence to deliver prescriptions that could adapt to temporal variations in the regulatory subject and scope.
- **Impact**- If any of these conditions are not met, the resulting CAC regulation will most likely prove to be sub-optimal or ineffective in achieving its intended objective.

Rising Artificial intelligence and the challenges

- **Rise of AI**- AI-based technologies are evolving at a breakneck pace, with "an above average number of technologies on the Hype Cycle reaching mainstream adoption within two to five years," according to Gartner.
- **Impact of rapid rise**- The extremely fast-evolving nature of the AI-innovation landscape strongly disfavors any anticipatory recognition of a finite set of distinct use-cases and the universe of associated risks and benefits associated with their adoption, in a timely and accurate manner.
- **Advancement vs regulation**- This gap between advancements in AI and optimal regulatory responses to steer them in the right direction becomes even wider in low- and middle-income countries, where regulatory institutions continue to grapple with resource crunches.

What's the alternative regulatory approach?

- **GIS Approach**- The pacing problem in AI regulation implores the need for a robust **government-led industry self-regulation (GIS) regime** that could adaptively respond to risks arising from AI adoption.
- **What is expected in GIS-** Under the GIS arrangement, the government, via rigorous consultations with all stakeholders, would define regulatory goals or principles, and refrain from prescribing the means and methods to achieve them; instead, the industry would take on that responsibility by formulating suitable standards and codes of conduct, which the government may choose to then certify.
- **Potential in GIS**- The GIS arrangement holds immense potential to perfectly combine government oversight with industry expertise to guide responsive and agile interventions in AI-led markets, equitably balancing the interests of private innovation and enterprise with that of public safety.

Why the GIS approach cannot be a long-lasting solution?

1. **Not purely self-regulatory**- First, the proposed regulatory approach is fundamentally predicated on the adoption of a clear-cut framework for reporting industry practices to the government, with a view to demonstrate the AI industry's due diligence in pursuing self-regulation in alignment with the regulatory goals and principles for responsible AI adoption laid down by the government.

- This is unlike a pure self-regulation arrangement without any form of government involvement.
- Put simply, in the proposed self-regulation arrangement, the fox does not remain in full charge of the hen house.

2. **Strong market incentives**- Second, strong market incentives for responsible AI adoption are becoming apparent.

- AI-led enterprises are recognising the medium- to long-term value for their shareholders from strategic investments in risk assessment and mitigation tools and resources, and strengthening corporate governance structures for end-to-end adoption of responsible AI best practices that prioritise user trust and safety.

3. **Reporting risks from AI**- Third, globally, a good number of civil society organisations and interdisciplinary think tanks have hit the ground running to track and report emergent risks from AI adoption, propose rigorous measures for their mitigation, and make sure that fairness, transparency, and accountability remain listed as the highest corporate priorities for all AI-led enterprises.

- With this, the AI industry has become increasingly aware of the existential risks from widespread public censure of unethical applications of AI in today's hyper-connected world.

Conclusion

Even the outspoken sceptics of industry self-regulation like former Lead of Ethical AI at Google, **Margaret Mitchell** have emphasised the indispensable value of industry insights in designing an optimal regulatory regime for responsible AI adoption: "…it's possible to do really meaningful research on AI ethics when you can be there in the company, understanding the ins and outs of how products are created. If you ever want to create some sort of auditing procedure, then really understanding — from end to end — how machine learning systems are built is really important."

India's quest for self-reliance in solar energy

Context-

With rising demands in energy sector and growing challenges due to Russia-Ukraine war, India aims to become self-sufficient in the energy sector to fulfill all its needs.

Syllabus- Contemporary Global Concerns- Environment

Material Intensity of Clean Energy

- The low-carbon future that India and the rest of the world is moving towards will be far more material intensive.
- **Low quality RE**- This is because clean energy technologies need more materials to aggregate low-quality (highly dispersed) renewable energy (RE) than technologies that extracted and moved energy dense fossil-fuels.
- **Raw material availability-** Consequently, raw material (metals and minerals) availability is expected to be one of the biggest challenges in decarbonisation efforts and electrification of the economy.
- **Data**- By one estimate, increase in demand for materials between 2015 and 2060 is projected to be 87,000 percent for electric vehicle batteries, 1,000 percent for wind power, and 3,000 percent for solar cells and photovoltaics (PV).
- **Potential**- Generating one terawatt of electricity from solar energy could consume 300-400 percent more materials intensive than generating electricity using natural gas or coal as fuel.

Silicon in Solar Cells

- **Importance of Silicon-** The precursor material for both electronic-grade silicon (higher level of purity) and solar-grade silicon (slightly lower grade of purity) is metallurgical-grade silicon.
- **Process involved**- The basic process to convert the feedstock SiO_2 (silicon dioxide or silica) or quartz to Si (silicon) involves reduction (decrease in oxidation number, usually by gaining electrons) followed by purification of the resultant zerovalent (inert) solid, and finally recrystallizing it into forms that can be further processed.
- **Importance of graphite**- Carbothermal reduction of SiO_2, invented in the nineteenth century is overwhelmingly the dominant process for the first stage in the Si industry today. This reaction is performed with graphitic carbons as the reducing equivalents for converting lumpy quartz to zerovalent Si within electric arc furnaces.
- **Potential**- The operation of arc furnaces for metallurgical-grade Si requires roughly 12 kWh/kg (kilowatt hour per kilogram) of electricity. Significantly more energy is required for refining this Si into purer forms of crystalline or solar grade Si (polysilicon).

Resources and Production

- Even in a scenario where the world shifts to 100 percent (RE), silicon scarcity is not anticipated.

- **Challenge**- Silica found in nature as sand, usually in the form of quartz is the second most abundant element on earth's crust after oxygen. However, the collection and manufacture of crystalline Si required for PV cells are extremely challenging.
- Si in nature is found only as impure, oxidized sand or silicates and the chemistries required for purification, reduction, and crystallization are complex.
- These processes are industrially complicated, costly, and polluting, manifesting in high energy and environmental costs for crystalline, solar-grade Si PVs.

Fossil fuels vs Silicon

- **Benefit of silicon over fossil fuels**- Given the complexity in the manufacture of Si, production capacity of silicon is considered a strategic asset in the solar value chain. This is in contrast to fossil fuel sector where resource endowment rather than production capacity is the most important strategic asset.
- Quantitative estimates of the raw material are not made as reserves in most producing countries is abundant in relation to production.
- **Producing nations**- In 2019, China was the leading producer of silicon metal and ferrosilicon (in terms of silicon content) with a production of 4.5 million Tonnes (MT) that accounted for over 64 percent of global production of about 7 MT.
- **India's potential**- Though India is among the top 15 producers, its production of 60,000 T (counting only silicon content on ferrosilicon) was less than 1 percent of global production in 2019.
- **Bhutan**- In 2018 Bhutan was the second largest source of India's SiO_2 imports.

India's quest for Self-Reliance

- **Self-reliance**- The core theme of India's post pandemic industrial policy is 'Aatmanirbhar Bharat' or a self-reliant India. In this context, becoming self-reliant in RE technologies in general and solar technologies, in particular, is an important policy goal.
- **Emphasis on imports**- Currently more than 80 percent of solar panels and modules are imported, primarily from China.
- **Low tariffs**- Cheap imported panels have contributed to India having one of the lowest solar power tariffs in the world but also raised energy security and geo-political concerns.
- **Manufacturing units in India**- Though India has a solar PV cell manufacturing capacity of 3 GW (gigawatt) per year and solar PV module manufacturing capacity of 10 GW per year, India has no manufacturing units for polysilicon, wafer or ingots.
- **Incentives**- To decrease imports and promote local manufacturing of solar panels, the government has offered a number of incentives.

Incentives by Indian Government-

- **SEZ**- In 2018, a 20-percent subsidy for capital expenditure in special economic zones (SEZs) was offered to potential manufacturers.

- **Public procurement**- In 2021 public procurement of solar components was mandated to be only from class I suppliers that have local content equal or more than 50 percent.
- Solar PV cells and modules must be sourced from domestic manufacturers for central government schemes to promote the use of solar energy such as PM KUSUM (Pradhan Mantri Kisan Urja Suraksha EvemUtthan) for replacing electrical agricultural pumps with solar pumps and for subsidised rooftop solar projects.
- **BCD**- In addition, the government has also imposed basic customs duty (BCD) on import of solar PV cells and modules effective from April 2022.
- **PLI**- In 2021, the Indian Renewable Energy Development Agency (IREDA) released a list of 18 bidders for its production linked incentive (PLI) scheme for setting up fully integrated production of Si solar cells. Four applicants have proposed a 4 GW solar factory each that is fully integrated from polysilicon (highly pure form of crystalline silicon) production through wafer, solar cell and module manufacturing.
- **Potential of PLI**- The PLI scheme is expected to attract a direct investment of around US$2.33 billion. Given the strong response for the PLI scheme for manufacturing solar modules, the scheme outlay has been further increased to US$3.2 billion from US$600 million earlier. This is expected to increase setting up of cell and module manufacturing capacity from 10 GW to 40 GW.

Challenges in the sector-

- **High cost**- The high cost of production of silicon metal is expected to limit entry of new players.
- **Energy intensive**- The production of silicon metal using arc furnaces is energy intensive, which increases its cost of production.
- Industrial electricity is **not necessarily cheap** in India and this matters as a large portion of the total production cost is related to its energy consumption.
- **Intermediary prices**- Further, the cost of producing silicon metal is controlled by the prices of other components such as coal, quartz, oil, natural gas, and electrodes.
- **Less players in the field**- Quartz mining is concentrated among few players which means India is not likely to be a member of the silicon producing and exporting countries. To ensure overall mineral security and to acquire equity assets, India has plans to set up a joint venture company namely KhanijBidesh India Ltd. (KABIL) with the participation of three central public sector enterprises namely, National Aluminium Company Ltd. (NALCO), Hindustan Copper Ltd. (HCL) and Mineral Exploration Company Ltd. (MECL).
- KABIL is expected to carry out identification, acquisition, exploration, development, mining, and processing of strategic minerals overseas for commercial use and meeting country's requirement of these minerals.

Conclusion

India's experience in acquiring oil and gas equity assets for energy security had only modest success but that experience may enrich India's quest for mineral security.

India's gendered digital divide

Context-

As COVID-19 coursed through countries, governments responded with lockdowns that drove people towards digital marketplaces. Globally, digital adoption escalated by five years in merely two months in 2020. India has set a target of reaching a US $1 trillion digital economy by 2025, a five fold growth from the US $200 million in 2017–18.

Syllabus- Social Movements- women's movements

## COVID brought the concept of gendered digital divide-

- While COVID-19 propelled a 500 percent increase in tele-health consultations, a structural shift towards online shopping with e-retail reaching 95 percent of Indian districts, and digital payments touching the 100 million transactions per day mark, it amplified another trend: The gendered digital divide.

## How other countries perform in this field?

- **Bangladesh**- Bangladesh's gender gap in mobile ownership stood at 24 percent and 41 percent in mobile usage.
- **Pakistan**- Pakistan's gender gaps were even higher at 34 percent for mobile ownership and 43 percent for mobile usage.

Gendered digital divide data in India-

- **Mobile phones**- Indian women are 15 percent less likely to own a mobile phone, and 33 percent less likely to use mobile internet services than men. In 2020, 25 percent of the total adult female population owned a smartphone versus 41 percent of adult men.
- **Mobile usage gap in south Asia**- Despite the mobile ownership gap reducing from 26 percent to 19 percent, and mobile internet use gap from 67 percent to 36 percent, between 2017 to 2020, South Asia continues to have the widest mobile gender gaps globally.
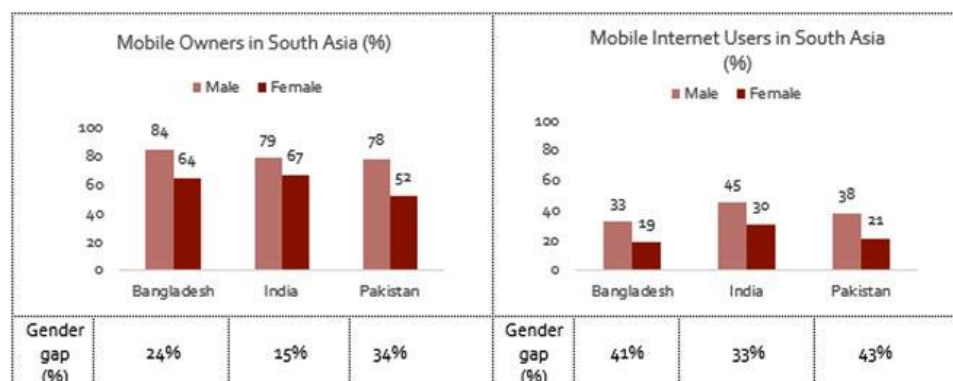
- **India's performance in Asia-Pacific**- Within Asia-pacific, India had the widest gender gap in internet usage in recent years, a gender gap of 40.4 percent with only 15 percent of women accessing the internet versus 25 percent of men. In comparison, in other Asian countries, the gender gap stood at 39.4 percent in Pakistan, in 11.1 percent in Indonesia, and 2.3 percent in People's Republic of China.
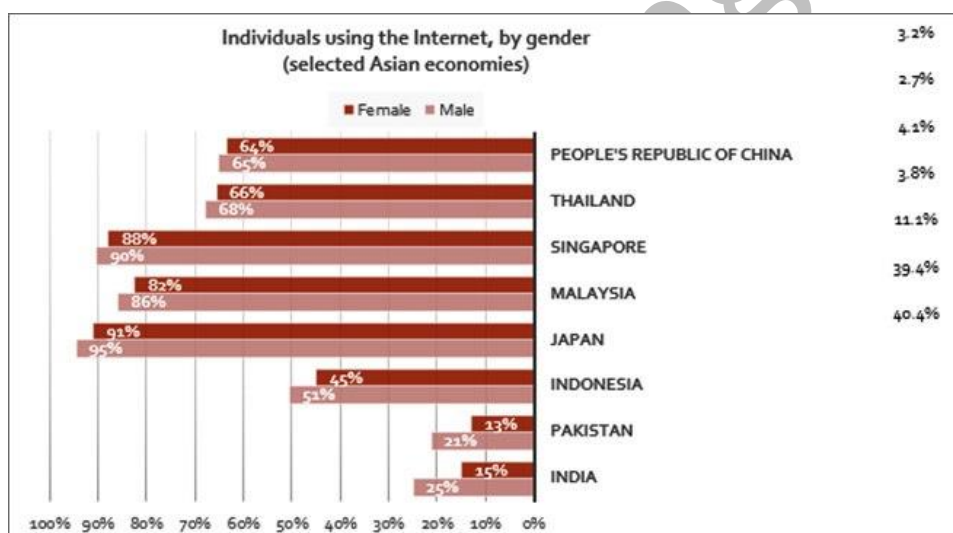
Disadvantage of gendered digital divide in India-

1. **Rural-urban digital divide**- First, there is a rural-urban digital divide, such that rural broadband penetration is only 29 percent against a national average of 51 percent.
- Across states, women in rural areas are less likely to own mobile phones, with this rural-urban divide being the narrowest in Goa, Kerala, and Northeastern states, and the widest in West Bengal, Gujarat, Maharashtra, Andhra Pradesh, and Telangana.
2. **Income-based digital divide**- Second, there is an income-based digital divide between households.
- Given the average price for data is US $0.68/GB in India, our estimates show that each GB of data costs low-income households (earning less than US$2/day) 3 percent of their monthly income versus 0.2 percent for middle-income households (earning US $10–$20 per day).

3. **Intra-household discrimination**- Finally, intra-household discrimination prevents women from equitably accessing digital devices within the domestic sphere, which in turn widens the gender-based digital divide.

Why mobile phone usage is less among women?

- **Patriarchy**- Even when they are permitted to own or use household-level mobile devices, women's online activity is often governed by male relatives.
- **Women's reputation angle**- While mobile phones are viewed as a risk to women's reputation pre-marriage; post-marriage, phone-use is viewed as an interruption to caregiving responsibilities.
- **Social norms**- Women generally refrain from speaking on their phones in public places, preferring to conduct their conversation within the home, owing to prevailing social norms and fear of judgement.
- **Exclusion of female population**- In this social structure, women have found themselves excluded from the growing digital economy post COVID-19, especially when aspiring for online schooling, skill training, entrepreneurship, and work opportunities.

Digital divide and digital education-

- **Data**- Between March 2020 to February 2021, Indian schools were fully closed for 62 percent of instruction days, and partially for 38 percent. These school closures placed 320 million students including 158 million girls at risk of dropping out and reaching large learning gaps.
- During this period, nearly three-quarter of rural students, across government/private schools, received teaching material over WhatsApp, and nearly 1 in 10 parents purchased a smartphone for online learning.
- **Boys over girls**- However, during consultations with majority of villagers, several stakeholders noted that families exhibited a preference for male family members during the COVID-19 period. They ensured their sons had the privilege of digital devices and data packs access even when facing income constraints, but did not extend the same treatment to their daughters.

Digital divide in employment opportunities-

- **Digital unfamiliarity**- Digital illiteracy and unfamiliarity with digital platforms deterred women entrepreneurs from moving to online marketplaces post COVID-19.
- **Bamboo artisans in Bengal**- Stakeholder consultations found that despite their incomes being nearly wiped out due to cancellation of physical fairs and exhibitions during COVID-19, Jhuri-makers (bamboo artisans) in West Bengal were reluctant to move to online platforms due to limited knowledge of social media and digital marketing channels, combined with high data costs.
- **SHG**- Women Self-Help Group (SHG) members across states like Maharashtra, Telangana, Andhra Pradesh, and Gujarat shared that even though women in their community were using phones for

personal use, they were unable to make financial transactions online, and did not use phones for their businesses.

Social challenges due to digital divide-

- **Less access to govt services**- The gendered digital divide is also preventing women and girls from accessing government social security benefits and even booking COVID-19 vaccination slots.
- **Community-based organisations-** Community-based organisations (CBOs) in Maharashtra shared that despite the State government announcing cash support for domestic workers in April 2021 to combat the economic impact of the second wave, many women were unable to access this relief, as they were not registered on government portals and were unaware of the online registration process.
- **Female to male vaccination ratio**- Further, the gender gap increased as vaccinations opened to wider population groups, with the female to male vaccination ratio worsening from 0.96 at end-March 2021 to 0.9 at end-June 2021. Online registration being mandatory to avail the COVID-19 till June 2021 has been a key reason for this gap.

Examples of concerted efforts that helped in reducing the digital divide?

1. **Mann Deshi Foundation-** a community-based financial services enterprise in Maharashtra, introduced a low-cost EMI programme that allows women to purchase smartphones. Approximately 80 percent of the women in their community purchased smartphones by availing this scheme.
2. **Digital Didis**- Several "Digital Didis" were trained and engaged to help women navigate online platforms and digital marketplaces. Thanks to these hybrid training programmes and focused support, women entrepreneurs joined WhatsApp-based and online marketplaces to sell masks, processed foods, textiles, and other products during COVID-19.
3. **Human Development and Research Centre**- The Human Development and Research Centre in Gujarat started a "mobile library" for young women from low-income households to borrow phones to attend online skill training sessions.
4. **Maharashtra State Rural Livelihood Mission**- The Maharashtra State Rural Livelihood Mission organised online skill training for women SHGs on mask production and trading on digital marketing websites, and facilitated a partnership with Amazon to help women entrepreneurs survive the pandemic.

Way forward to reduce digital divide in India-

Moving forward, governments and private sector organisations should support CBOs to upscale community-led digital literacy and digital financial inclusion programmes to address the gendered digital divide. Programmes and initiatives across three action pillars should be prioritised:

1. **Easing access to mobile devices**, e.g. by providing free mobiles/tablets to school-going girls, female health workers (including Accredited Social Health Activists, Anganwadi Workers, and

Auxiliary Nurse Midwives), female teachers and female community leaders and the rural/urban poor; or offering affordable smartphone loans for women through corporate social responsibility and government schemes.

2. **Digital literacy programmes for women and girls**, including increasing public investment in the PM Gramin Digital Saksharta Abhiyan scheme from its current allocation of INR 300 crores in FY2022, of which 40 percent is for women and girls; launching tailored digital training courses for women entrepreneurs on digital marketing and digital payments; and integrating digital literacy in school curricula.

3. **Investment in rural digital connectivity** through the rapid implementation of the Bharat Net programme to provide rural broadband connectivity and establishing village level high speed internet connectivity hubs.

Conclusion

While there is no doubt that India is digitising rapidly, the country's women must not be left out of the virtual conversation. Providing equitable access to smartphones and the internet will equip women with the knowledge and resources they need to effectively participate in the national economy. It is. therefore, imperative to not only increase women's smartphone ownership as it assists in internet adoption, but also to accelerate digital literacy programmes and work towards ending digital discrimination based on gender norms.

Is India prepared to take on China? - lessons from Ukraine crisis

Context-

Russia's invasion of Ukraine has shown the limits of American power and failure of the international system to stop yet another war. Though the present military conflict is mainly internal to Europe's military security matrix, it will seriously impact geopolitics.

Syllabus- India and the Global Centers of Power: USA, EU, Japan, China and Russia.

Takeaways for India in context of China-

Locked in a boundary dispute with China, India has two critical takeaways from this development.

1. **Stripping USA's status**- Ukraine's invasion has stripped America of its sole security guarantor status and has exposed its military and diplomatic inability to confront a peer military power.

2. **Emboldening China**- This experience will only embolden Beijing to replicate Moscow's actions against India.

Dilemma for India-

- **USA**- Should the People's Liberation Army (PLA) translate its violent brawls with the Indian Army into a localised war to capture territories along the Line of Actual Control (LAC), New Delhi can't expect Washington (or the West) to provide anything more than lip service.
- **Russia**- On the other hand, Russia will be busy grappling with internal economic issues in the wake of the 'unprecedented sanctions' imposed as a result of its invasion of Ukraine. Given this scenario, India will be on its own—diplomatically as well as militarily, against any Chinese military overtures.
- **Losing credibility-** The current crisis is diplomatically challenging for New Delhi—especially when it is dependent on both the West and Russia in several ways. New Delhi will lose some credibility on either side of the fence, i.e., pro-Russia or pro-West.
- **UNSC vs Military support**- The danger of losing the West's support would cost India quality military hardware than what Moscow provides, whereas losing the latter's support would cost New Delhi one crucial vote in the UNSC. In the immediate future the delivery of the much-awaited S-400 missile systems and other military hardware that could augment India's defence capabilities will now be delayed.

Can India expect support from USA?

- **USA vs Russia**- Clearly, America didn't want to enter into any conflict with Russia as it is aware of Russia's growing sphere of influence, and the Pentagon doesn't have an appetite for another conventional or unconventional war.
- **USA in Ukraine**- Long before Russia's military action against Ukraine, America had refused to commit troops and supply weapon systems to Kyiv.
- **Other NATO Partners**- The other North Atlantic Treaty Organisation (NATO) partners, too, have been shy of any direct military engagement with Russia.

Opportunity for China?

- **No action against Russia**- The current crisis presents an opportunity for Beijing. By not calling Russia's military actions an invasion and abstaining from voting in the United Nations Security Council, China has signalled its tacit support for Moscow.
- **LAC invasion opportunity**- It's a matter of time before Beijing draws a parallel from American and Russian disregard for a rules-based international order to invade India along the LAC. India, therefore, needs to be more vigilant on its frontiers and proactive on the diplomatic front.
- **Russian vs Chinese aim**- The PLA must be very minutely observing the Russian operations in Ukraine. Once Moscow's aim is achieved, the troops will be ordered to return to their barracks. In contrast, China wants Indian territory that it would never return, therefore, it would want a swift operation of not more than two to three days to invade and capture to dominate the latter diplomatic process.

NOTE- While New Delhi has followed the path of non-alignment, it will have to eventually bite the bullet in the face of contentious geopolitics and the hesitancy of the countries who have the military and diplomatic power to involve themselves.

The possibility of war

- **Galwan incident**- The Galwan episode of June 2020 was the PLA's cunning military move that could have cut the Indian Army's access to Daulat Beg Oldie and narrowed the geographical gap between China and Pakistan in the northern border areas.
- **Shaksgam Valley**- It must be noted that China has been comfortably sitting in the Shaksgam Valley (on the north of Siachen) and Pakistan is on the east of the glacier. India's one off-the-guard moment could complete the military collusion between Beijing and Islamabad.
- **Military commanders talk**- Despite several rounds of talks between military commanders from the two sides, the PLA has continued to amass troops and military hardware along the LAC. It indicative of a more exhaustive, but short military campaign China might want to wage in future.

What steps China might take?

- **Situation in Ukraine vs China**- In Ukraine, Russia is fighting a classic conventional war. There are multiple entry/exit points available for the armoured columns, mechanised forces and the infantry units—supported by the Russian Air Force.
- ✓ In contrast, the geography and weather conditions along the LAC are major hurdles. For the vehicle-mounted forces, there are limited entry/exit points, whereas for the infantry—treading through the mountains could prove to be death traps.
- ✓ At the same time, the air force has several restrictions. Here, classic conventional operations would need support of the nature and modern technology.
- **Weaponisation of water**- The PLA is well aware about these realities and, therefore, it would adopt vicious methods.
- ✓ First amongst them is weaponisation of water.
- ✓ Amidst the Galwan crisis in 2020, there were reports of China controlling the water flow of the Galwan river and Beijing is already constructing five dams over the Brahmaputra that flows into Arunachal Pradesh.
- ✓ In short, before the PLA launches a conventional operation, weaponisation of water—to flood Indian positions or to run the downstream areas dry or sabotage water by polluting it cannot be ruled out.
- **Non-Kinetic attacks**- The next onslaught of the PLA could be simultaneous activation of non-kinetic domains such as hybrid, grey-zone and information warfare (comprising of cyber-attacks, electronic warfare, and psychological warfare), to overwhelm India's command, control, communication, computers, intelligence, surveillance and reconnaissance (C4ISR) systems to disorient Indian Army's perception of the battlefield and restrict its ability to counter-attack, and shut down various government institutions to numb New Delhi's diplomatic response.
- ✓ For India, such a situation could prove to be a tall challenge.

Conclusion

The Indian Army is battle hardened to deal with conventional military offensive to stop the PLA's advance and can equally penetrate the plains across the LAC and capture dominating heights. It is also acquiring capabilities to fight in the domain of non-contact warfare, but with China, it would not only be the game of numbers but also about overwhelming use of technology. The Government of India needs to rapidly build critical military infrastructure and unconventional warfare capabilities that would support every stage of the war.

Knowledge partnership between India and UK

Context-

In January 2022, India and the UK officially launched negotiations for a free trade agreement (FTA) aiming to conclude by the end of this year. The primary aim is to double the existing bilateral trade between India and the UK by 2030.

Syllabus- Recent developments in Indian Foreign policy

2030 Roadmap between India and UK-

- **Signing of the deal**- Earlier in May 2021, British Prime Minister Boris Johnson and Prime Minister Narendra Modi launched a 2030 Roadmap that will serve as an operational framework for the UK-India relations across multiple domains such as health, education, trade, climate, science and technology and defence.
- **Joint working group**- Under the purview of the 2030 Roadmap, a Joint Working Group on Trade was formed to better understand the ambitions and interests of each other before successfully agreeing for an FTA.
- **Importance of India for UK**- Additionally, India is a key strategic ally for the UK in the Indo-Pacific both in terms of market share and defence collaboration.
- For the UK, a successful conclusion of an FTA with India would bolster its idea of Global Britain at the heart of the Indo-Pacific.
- **Importance of education in India-UK**- But one of the relatively unacknowledged sectors with high potential within the broader India-UK relations remains education.

History of education as a sector between India and UK-

- **Contributor to the British Higher Education system**- India and the UK have a history of commitment to further educational ties as India is one of the biggest contributors to the British Higher Education system.
- **Data**- As of 2019-2020, there are over 53,000 Indians enlisted in the UK educational institutions.

- **NEP of India**- The National Education Policy (NEP) of India has proposed major reforms to address the current lacunae in India's human capital challenges primarily to improve the quality of domestic higher education institutions and widen India's footprint as a global education hub.
- **Education in 2030 roadmap**- The 2030 Roadmap along with NEP promotes digital education and creates international collaboration by advancing currently existing initiatives such as the UK-India Education and Research Initiative (UKIERI).

What does it signifies for India?

- **Data**- India hosts the world's largest youth population under the age of 25 representing over 600 million and this demographic dividend has the potential to be the backbone of India's economic growth in the coming decades.
- **Chinese dependency**- The report also highlights decreasing Chinese dependency by aiming to double the number of Indian students studying in the UK by 2024-2025.
- **Relation b/w UK and China**- The primary reason for this is the structural breakdown of the relationship between the UK and China which could have major spillover effects on international education and collaborative research.
- **What is the case b/w India and UK**- In the case of India-UK, such a breakdown seems "almost inconceivable." The UK aims to support India by becoming its first-rank knowledge partner to help in the fulfilment of its potential and achieve its major objectives under NEP.

Suggestions for building blocks b/w India and UK for Knowledge partnership-

The report further identifies five building blocks for India and the UK to enable the comprehensive knowledge partnership.

1. It suggests signing an **India-UK mutual recognition** of credits and qualification treaty
2. Using **Turing** (an initiative launched by the UK government which is a global programme to study and work abroad) to support a more balanced partnership in international education
3. **Doubling the number of Indian students** by 2030 by moving India to the low-risk country list and eventually implement visa liberalisation of a post-study work visa
4. Provide **funding to Indian students** to assure quality and sustainability
5. **Support collaboration in R&D** that promotes frontier science.

How can the knowledge partnership b/w India and UK grow?

- **Growing international education**- International education has become one of the most significant export industries in the 21st century and if higher education was to be accounted as exports, then UK's exports at £7.8 billion would have been its single largest export to India.
- **UK's International Education Strategy**- Hence, India is a key priority country under the UK's International Education Strategy and with Transnational Education (TNE) slowly gaining relevance in India, it allows the UK an opportunity to widen its global footprint in India and widen the scope of Global Britain.

- **Using India's demographic dividend**- Rightful enablement of India's youthful demographic prowess would significantly contribute towards its economic growth in this century as India's research base is gradually expanding but is yet to realise its potential.
- **2030 Roadmap**- Under the aegis of 2030 Roadmap, a UK-India Young Leaders Entrepreneurship Forum was established to facilitate a platform for young leaders to collaborate in various sectors.

Conclusion

India-UK relations over the years have blossomed as India has moved from 22nd to 16th place in UK's preferred partners in less than 10 years. A knowledge partnership would prove beneficial for both as not only will it help promote tertiary education in Indian but will also allow the UK to further its ambitions as part of the Global Britain. An India-UK knowledge partnership is a natural corollary to the growing ambition in London and New Delhi about the state of bilateral ties. The two nations have waited long enough but the present geopolitical environment makes such a possibility a highly realistic aspiration. It is time to seize the moment.

Let's BIMSTEC Together

Context-

The summit meeting next week in Sri Lanka is of particular consequence as for the first time BIMSTEC is scheduled to adopt a charter that will lend clear purpose to the organisation and also rationalise its sectors of cooperation for better functionality.

Syllabus- Regionalisation of World Politics

> A quarter of a century has passed since the formation of the Bay of Bengal Multi-Sectoral Technical and Economic Cooperation, but it is only recently that BIMSTEC has begun to gain traction.

About BIMSTEC-

- **Region**- Devoted exclusively to the Bay of Bengal region, BIMSTEC has returned to the limelight in recent years with the rise in strategic significance of the Bay itself.
- **Members**- It boasts of a membership encompassing all Bay littorals – India, Bangladesh, Sri Lanka, Nepal, Bhutan, Myanmar and Thailand – and is therefore ideally suited to be the platform for re-engagement to build a more collaborative future.

- **Leadership for India**- From an Indian perspective it is also reassuring that the country's aspirations find convergence with its role within the organisation.

How BIMSTEC came into being?

- **Decline of SAARC**- After the marginalisation of SAARC since 2016 owing to tensions between India and Pakistan, a search for alternative regional collaborations led India to BIMSTEC.
- **Connecting regions**- Centred on the Bay of Bengal, BIMSTEC was poised to connect the Greater Himalayan region with the Bay as well as act as a bridge between South and Southeast Asia.
- **1st step of rejuvenation by India-** Thus driven, India convened the first BIMSTEC Leaders Retreat in Goa at the end of 2016, taking the first step to rejuvenate it after decades of inertia.
- **2017 summit**- The following year, at the organisation's twentieth anniversary, June 2017, Prime Minister Modi declared BIMSTEC to be, "a natural platform to fulfil our key foreign policy priorities of 'Neighborhood First' and 'Act East'".
- **Initiatives by India**- Since then, India have been undertaking initiatives to consolidate its role within BIMSTEC. The reorganisation of BIMSTEC's areas of cooperation in the build-up to its 5th Summit, has only served to facilitate this even further.

BIMSTEC 2021 Meeting highlights-

- As agreed at the 17th BIMSTEC Ministerial Meeting held in November 2021, BIMSTEC decided to regroup its 14 diverse priority sectors into seven broad concerns, each under the lead of one member state.
    1. Trade, Investment and Development (Bangladesh)
    2. Environment and Climate Change (Bhutan)
    3. Security (India)
    4. Agriculture and Food Security (Myanmar)
    5. People-People contact (Nepal)
    6. Science, Technology and Innovation (Sri Lanka)
    7. Connectivity (Thailand)

India's responsibility-

- **SAGAR Initiative**- India's responsibility to lead the sector on 'Security' is in sync with its vision of 'Security and Growth for All in the Region,'-SAGAR, an idea the country has been nurturing in recent years as an extension of its Act East and Neighbourhood First Policy.
- **Indo-Pacific Ocean's Initiative**- In 2019, building upon this vision of SAGAR, the country announced its Indo-Pacific Ocean's Initiative, to support the building of a rules-based regional architecture resting on seven pillars.
- **Resonance with India's goals**- Amongst these, three pillars; 'Maritime Security', 'Maritime Resources' and 'Disaster risk reduction', resonate particularly well with its role in BIMSTEC.

- **Sub-sectors under Security**- This is because the sector of cooperation on 'Security', embodies three sub-sectors; 'Counter Terrorism and Transnational Crime' (CTTC), 'Energy' and 'Disaster Management'. CTTC had already been under India's lead as had been the priority sector 'Environment and Disaster Management'.
- **Betterment for India's goals**- With 'Energy' originally under Myanmar's lead, joining the 'Security' bandwagon, India's focus on non-traditional security concerns in the Bay has become more holistic.

How can it work to strengthen India's hegemony?

- **Net security provider**- India visualises itself as the 'net security provider' of the region. This term can be traced to 2013 when India's former Prime Minister Manmohan Singh, was commenting on the country's aspirations to take a leading strategic role in the Indian Ocean while expanding into the Pacific.
- **Security concerns**- The Bay encounters a range of security concerns from the 'natural' to the 'man made'. Indeed, the Bay is infamous for its turbulence with natural disasters wreaking havoc on its littorals.
- **Transnational concerns**- Transnational concerns such as terrorism, sea piracy, undocumented migration, human trafficking and Illegal, Unreported and Unregulated (IUU) fishing are just tip of the iceberg. Their sheer multiplicity makes it impossible for any country to single-handedly address these concerns.
- **Shepherd Country under "security"**- Within the 'Security' priority sector under India's umbrella, a 'Shepherd Country' has been assigned for each Sub-Group
    1. Prevention of Illicit Trafficking in Narcotics Drugs, Psychotropic Substances and Precursor Chemical (Myanmar)
    2. Intelligence Sharing (Sri Lanka)
    3. Legal and Law Enforcement Issues (India)
    4. Anti- Money Laundering and Combating the Financing of Terrorism (Thailand)
    5. Cooperation on Countering Radicalization and Terrorism (India)
    6. Human Trafficking and Illegal Migration (Bangladesh).

Conclusion

BIMSTEC continues to suffer from some serious challenges that include institutional fragility, the weakness of its Secretariat, the paucity of consolidated funding and the absence of clear guidelines. Hopefully the promised Charter will resolve many of these, and the organisation will be able to realise its true potential, especially in an environment that is evolving faster than the ability of the regional states to manage it. After all, BIMSTEC can only be as successful as its member states commitment to it and perhaps time has come for the Bay of Bengal community to commit itself to the idea of regional cooperation and coordination.

Breaking with Russia on defence is difficult

Context-

So far, India has remained neutral and abstained from voting against Russia at the United Nations (UN). But soon, there may be no more wiggle room left and the seas could become rougher, even stormy. This could push the US to place sanctions through the Countering American Adversaries Through Sanctions Act (CAATSA). This action can have its own geopolitical fallout on the growing Indo-us alignment aimed at checking China.

Syllabus- India and the Global Centres of Power: USA, EU, Japan, China and Russia.

India could be heading to become a collateral casualty of the devastating Russian attack on Ukraine. The United States-European Union (US-EU) sanctions can derail our ties with Russia.

Factors shaping India's stance-

India's stand on the Russian invasion of Ukraine is shaped by two factors.

1. The first is the history of the relationship, and
2. The second is our significant reliance on Russia for military equipment, spare parts, and ancillaries, along with strategic weapons such as missiles and nuclear-propelled submarines.

Data- A 2021 study by Stimson Centre scholars suggests the share of major Russian systems in our military is an astonishing 85%. Between 2000 and 2020, Russia accounted for 66.5% of India's arms imports.

India's current weapon deals with Russia-

- **Heavy weapons**- India's current acquisitions include four more high performance S-400 surface-to-air (SAM) systems, four Grigorovich frigates (two to be built in India), 21 MIG-29 fighters, and an Akula nuclear-powered attack submarine on lease.
- **Rifles**- There is also an order for Kalashnikov 203 assault rifles — 20,000 off the shelf and more than 500,000 licence-built in India.
- **Planning stage**- At the planning stage are some missile acquisitions, including the hand-held anti-aircraft missile for the Indian Army.
- **Ongoing projects**- There are several ongoing projects — licence producing more T-90S tanks, Sukhoi 30 MKI fighters and upgrading the Brahmos missile to a hypersonic version.
- **Importance for India**- Note that ancillaries and components routinely imported from Russia are essential for maintaining existing equipment and licence production, though Indo-Russian projects for nuclear-propelled submarines are presumably already sanctions-proof.

India's geopolitical posture in Eurasia

- **Stable**- India's geopolitical posture in Eurasia has been remarkably stable, unlike the US, China, and Russia, which have shifted alignments and preferences.
- **Neutrality**- We have had close ties with the former Soviet Union since the mid-1950s and maintained Russia favouring neutrality when it invaded Hungary in 1956, Afghanistan in 1980, and now, Ukraine.

Russia favouring India-

- **Endorsing India's South Asia policy**- For its part, the former Soviet Union and now, Russia, has unreservedly endorsed India's South Asia policy.
- **Backing in military battles**- It backed the liberation of Goa in 1961, maintained a largely neutral stand in the Sino-Indian war of 1962, and played a key role in helping India win the Bangladesh war in 1971.
- **Backed on Art 370**- It has, all through, backed India on Kashmir, down to the 2019 effective nullification of Article 370, which bifurcated the state and demoted it to a Union Territory.
- **Gave weapons when no one else did**- The Soviets came through in the 1950s and 1960s with equipment such as MIG-21 fighters and Foxtrot submarines, whose equivalent our erstwhile mentor Britain refused to give.
- **Cheap prices**- The Soviet Union had no concept of market prices, and so, all of it came at throwaway prices under rupee-ruble exchange arrangements along with technology transfer.
- We would never have been able to afford the size of the military that we have had since the 1980s with western equipment.

India's addiction to Russia-

- **Critiques views**- The Soviet systems, grumbled a critic, were a drug habit that India could not break.
- **Overcoming addiction**- New Delhi did seek to overcome the addiction in the 1980s by buying from the West, and also tried to design its own systems.
- **Consequences**- Imports often got entangled with corruption, and domestic programmes, like that of the Tejas fighter and the Arjun tank, proved to be disappointing.
- **Example of Aerial drone**- India has not been able to field an aerial drone of any consequence, even though we have been working on this since the 1990s.

Can we break away from the Russians?

- **Widening market**- In the last two decades, India has enhanced arms purchases from countries such as France, Israel, and the US.
- **If India stops**- Even if India were to stop all Russian purchases today, it would take decades before it would show. This is because systems such as tanks, fighter aircraft and ships, and artillery are routinely upgraded and often remain in service for decades.

Consequences of Russia-Ukraine war-

- **Rupee-ruble trade**- The Russian arms industry is now in the cross-hairs of the Americans, and New Delhi and Moscow will have to come up with creative solutions to keep the relationship going. One obvious move would be to revert to the old rupee-ruble trade.
- **Adequate general industrial capacity**- A major problem for India is the lack of an adequate general industrial capacity that can feed the domestic defence industry. Indian defence manufacturing may be on the point of take-off. But whether it can fly remains to be seen.

Conclusion

As majority of the experts have pointed out, government investments in defence research and development (R&D) are "not just worryingly, but laughably small". Just what can be achieved through effective policy and investment can be seen in South Korea which has, since the 1990s, developed its own tanks and submarines, and is working on a fifth-generation fighter and is one of the largest arms exporters in the world. India has a long way to go.