

# SAMACHAR MANTHAN

WEEK 09

20 - 26 July  
2020

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20 - 26 July 2020

## **THIS WEEK'S HOTTEST STORIES**

**Coronavirus - Health and Governance Issues**

**Foreign Policy Watch: India-China**

**Coronavirus - Disease, Medical Sciences Involved & Preventive Measures**

**Digital India Initiatives**

**Anti Defection Law**

**Agricultural Sector and Marketing Reforms – eNAM, Model APMC Act, Eco Survey Reco, etc.**

# ECONOMICS

TELECOM AND POSTAL SECTOR - SPECTRUM ALLOCATION, CALL DROPS, PREDATORY PRICING, ETC

## Adjusted Gross Revenue (AGR) in Telecom Sector

Economics | GS3: Effects Of Liberalization On The Economy, Changes In Industrial Policy and their effects on Industrial Growth

Note4Students | From UPSC perspective, the following things are important:  
Prelims level : AGR  
Mains level : AGR disputes of Telecom companies

The Centre and telcos assured the Supreme Court that they would not conduct any re-assessment or re-calculation of the Adjusted Gross Revenue (AGR) dues, which now stands at 1.6 lakh crore.

### Try this question for mains:

Q.What are the various challenges faced by Indias telecom before the upgradation to 5G technology?

### Background

- In Oct 2019, the Supreme Court had directed telecom service providers to pay the pending dues aggregating to over Rs 1.47 lakh crore to the government by 23rd January 2020
- The decision impacts over 15 telecom firms, both current and defunct, but those with the highest liabilities are Vodafone-Idea Ltd (Rs 53,038 crore), Airtel (Rs 35,586 crore) and Tata Teleservices (Rs 13,823 crore)

### Brief History of the issue:

1994 Telecom sector was liberalised under the National Telecom Policy under which licenses were issued to companies in return for a fixed license fee. 1999 The government gave an option to the licensees to migrate to the revenue sharing fee mode I, so as to provide relief from high licence fees .

- Under this, telcos were required to share a percentage of their adjusted gross revenue (AGR) with the government as annual license fee (LF) and spectrum usage charges (SUC).
- The LF and SUC were set at 8 per cent and between 3-5 per cent of AGR respectively, based on the agreement.

### Department of Telecoms(DOT) Stand

**Telecos Stand** AGR includes all revenues (before discounts) from both telecom and non-telecom services AGR should comprise just the revenue accrued from core services and not dividend, interest income or profit on sale of any investment or fixed assets.

**2005** Cellular Operators Association of India (COAI) challenged the governments definition for AGR calculation.

**2015** TDSAT (Telecom Disputes Settlement and Appellate Tribunal) ruled in favour of Telecos

**Oct 2019** Supreme Court set aside TDSATs order and upheld DOTs definition of AGR

**Jan 2020** Supreme Court has accepted petition of Telecos request to extend the deadline fixed at 23rd Jan 2020 to pay up the dues (but not on the definition of AGR)

### Why the definition of AGR is important?

Because it has revenue implications for both government & Telecos.

- For government it means increase in its revenue collection which helps maintaining fiscal deficit and undertake welfare measures
- For Telecom Operators Added financial burden especially at a time where their assets are over-leveraged and profits are under pressure from severe competition (after Jios entry)

### Implication of the Supreme Courts 2019 Order

- On Telecom companies : Increased liability means losses in their operation in short term. It also erodes the telcos net worth impacting retail investors
- On Telecom Sector: It could potentially lead to Vodafone Ideas exit due to its weak financial position & its inability to pay its dues. This leads to the creation of a Airtel-Jio duopoly which may not augur well for the competitiveness in the sector and thus the governments vision of Digital India.
- On Banking Sector : AGR issue has triggered panic in the banking industry, given that the telecom sector is highly leveraged. Vodafone Idea alone has a debt of Rs 2.2 lakh crore. mutual fund industry having exposure to telecom sector will also see erosion of value.
- On Consumers : Competition in the sector will always lead to better prices and better technology. Possibility of creation of duopoly will impact the competition in negative manner.

### Way ahead

- Government should realize the consequences of the failure/ weakness of the sector on the broader economy & on its long term vision of Digital India.
- Therefore, instead of being inflexible on AGR for short term revenue gain, it should accommodate the interests of the telecom operators (like extension of deadline, foregoing interest on dues) so that long term vision is not compromised

# APMC Act is not the main problem

Economics | GS3: Transport & Marketing Of Agricultural Produce

Note4Students | From UPSC perspective, the following things are important:

Prelims level : APMC Act

Mains level : Paper 3- Issues with the APMC Act

The APMC Act, which is often blamed for the woes of the farmers is not the main problem. This article argues that the root of the problems of Indian agriculture lies somewhere else.

## Agriculture post-1991

- The priority post-1991 has been given to industry as well as services.
- Middle-class consumers have been favoured by at the expense of farmers.
- This neglect of agriculture resulted in an equally unprecedented gap between the standard of living in the rural and urban parts of the country.
- As a result, the urban/rural ratio, in terms of monthly per capita expenditures, has jumped from 1.84 to 2.42 between 2012 and 2018.
- This means that an average urban-dweller today can consume almost 2.5 times more than an average person in a village.

## Reforms by the government

- Government has decided to liberalise Indias agriculture by amending the APMC Act and the Essential Commodities Act.
- Contract farming will also be introduced in such a way that the buyer can assure a price to the farmer at the time of sowing.

## APMC Act in the context of Shanta Kumar Committee report

- The argument against the APMC Act is that it does not allow the free market to function due to government intervention.
- It denies farmers the opportunity to determine the prices of crops in the marketplace.
- In theory, this is a valid argument.
- But, Shanta Kumar Committee observed in 2015 that only 6 per cent of farmers get the Minimum Support Price (MSP).
- This is because of barriers to access for farmers as only 22 crops are procured under MSP.
- Infrastructure is also inadequate as there are only an estimated 7,000 APMC mandis across India.
- Procurement depends on the stocks required by the state.

## Why the APMC Act is not the problem

### 1) Farm Pricing is the problem

- The living costs of farmers was considered while determining agricultural pricing by the Agricultural Prices Commission (APC).
- CACP that replaced the APC in 1985 added a 10 per cent mark-up over the MSP to account for entrepreneurial costs.
- Such practices have been gradually eroded post-1991.
- The problem, therefore, is not state intervention but the way the government deals with agriculture.

### 2) APMC Act helped India build up food stocks

- India managed to weather the 2008 global food crisis only because it had enough food stocks as Indian agriculture was not linked to the international futures market.
- This was possible due to the procurement done through the APMC Act.

### 3) APMC Act reformed already by States

- Since agriculture is a state subject, the Act has been modified in 17 states.
- On the contrary, the condition of peasants has often been affected when the APMC Act has been diluted.
- Bihar is a case in point.
- The APMC Act was revoked in 2006 with the same rationale that further deregulation will attract private investment in infrastructure.
- Not only has that not materialised, but the existing APMC market infrastructure was also dismantled.

## Reforms that Indian Agriculture needs

### 1) Subsidy Reforms

- Indian Agriculture is still too heavily subsidised in favour of the big players.
- In the Union Budget 2019-20, the allocation for the Ministry of Agriculture was Rs 1,30,485 crore and the fertiliser subsidy alone was estimated at Rs 79,996 crore.
- But these subsidies are concentrated on a few crops.
- Agriculture economist Bruno Dorin has shown, only three crops receive more than 60 per cent of the so-called non-product-specific support to agriculture rice, wheat and sugarcane.
- This has led to environmental degradation like the depletion of groundwater levels and monocultures which are a threat to biodiversity.
- It has also led to the industrialisation of agriculture, that results in the strengthening of a handful of multinational companies, which supply chemical inputs.
- Liberalisation would only strengthen the role of large companies including those in the agri-food sector.

### 2) Agriculture needs to be ecologically viable

- Structurally, farming needs to be made economically and ecologically viable in India.
- State intervention for better pricing, investments in water harvesting and an agroecological transition could ensure a more resilient system to weather shocks like the current one.
- The government could draw inspiration from the Andhra Pradesh Community Managed Farming model.
- It promotes agroecological principles with the use of locally-produced, ecologically-sustainable inputs focusing on soil health..
- Since the agro-ecological system of farming is more biodiverse in nature, it will make the system more resilient overall.
- It will provide a safety net for farmers in case of crop damage due to various factors such as climate change or droughts.

Consider the question "Though the APMC Act has been blamed for the farmers' issues, it has historically been part of the solution. Critically analyse."

## Conclusion

By investing again in agriculture and following, at last, the recommendations of the M S Swaminathan Committee, the Government of India would also help bridge the drastic urban-rural divide.

## RAILWAY REFORMS

# Privatisation of Indian Railways

Economics | GS3: Infrastructure: Energy, Ports, Roads, Airports, Railways Etc.

Note4Students | From UPSC perspective, the following things are important :  
Prelims level : Not much

Mains level : Paper 3- Issues with allowing operation of passenger trains by private players

Indian Railways has launched the process of opening up train operations to private entities on 109 origin-destination (OD) pairs of routes using 151 modern trains.

## Background

Several committees have gone into the expansion and the modernisation of Indian Railways.

## Bibek Debroy committee:

- It recommended that the way forward for the railways was liberalisation and not privatisation in order to allow entry of new operators to encourage growth and improve services.
- It also made it clear that a regulatory mechanism was a prerequisite to promote healthy competition and protect the interests of all stakeholders.

## Objectives of privatisation

- To introduce modern technology rolling stock with reduced maintenance.
- Reduced transit time.
- Boost job creation.
- Provide enhanced safety.
- Provide world-class travel experience to passengers.
- Reduce demand-supply deficit in the passenger transportation sector.

## Need for the Privatisation of Railways

- Low Quality of Service, Catering and Punctuality: Indian Railways deserves the credit for serving the largest democracy in the world, but it faces criticism, particularly in case of aspects like service, catering, and punctuality.
- Low Internal Revenue: The problem of cross-subsidization has severely affected the internal revenue generation of the Indian Railways.

## To read more about the issue:

<https://www.civilsdaily.com/marketing-of-agricultural-produce-in-india-definition-role-apmc-act-model-apmc-act-2003/>

Original article: <https://indianexpress.com/article/opinion/columns/rural-india-coronavirus-farm-trade-ordinance-apmc-act-6515414/>

- Cross subsidization: Money earned through freight traffic is diverted to meet the shortfalls in passenger revenue, and thus the development of freight traffic infrastructure suffers.
- Increasing Number of Accidents: Repeated railway accidents have further raised questions on government ownership of railways.

Therefore, for long privatisation of railways has been projected as a possible solution to these issues.

## Advantages of Privatisation of Railways

- Improved Infrastructure: Privatisation will lead to better infrastructure which in turn would result in improved amenities for travelers.
- Currently, Indian Railways is marred by mismanagement in the form of stinking washrooms, lack of water supply and dirty platforms, it is expected that a private company will ensure better amenities.
- Normalization of prices due to the competition: Improvement in quality of services has to be matched up by a rise in charges paid by the travelers.
- However, the issue of price rise will be solved when private players are allowed to enter the sector since the move would foster competition and hence lead to overall betterment in the quality of services.
- Improved Security: Private participation can lead to better accountability and monitoring, which can keep a check on rising accidents in railways.
- Better Technological Innovation: Private participation can lead to the infusion of modern technology and capacity building of Indian railways.

## Issues with the move

### 1) Responsibility issue

- Railway crew will work the trains (151 trains in 109 routes) which will be maintained by the private investor.
- All the other infrastructure, track and associated structures, stations, signalling, security and their daily maintenance owned by the Railways will be fully utilised in running trains.
- Thus, the responsibility of the private investor ends with investment in the procurement and maintenance of coaches.
- Train operation, safety and dealing with every day problems rests with the Railways.

- In case of an unfortunate event, fixing responsibility will be an issue.

## 2) Day-to-day problems

- Provision of an independent regulator to resolve disagreement, discords and disputes.
- But this regulator will not be able to solve day-to-day problems of dichotomy unless the basic issue is resolved.

## 3) Speed issue

- Nearly all trunk routes in the existing network are speed limited to 110 kmph very few permit speeds of upto 120-130 kmph.
- To raise it to 160 kmph, as proposed, there has to be track strengthening, elimination of curves and level crossing gates and strengthening of bridges.
- There is no appreciable reduction in transit time for most proposed trains, when compared with the timings of the fastest train now operating on that route.

## 4) Passenger fare issue

- In the proposal, the Railways or government have no role in fixing passenger fares.
- Fares will be beyond the common mans reach.
- Fare concessions extended to several categories of people will not be made available by the private investor.
- The very objective of commissioning the Railways as a public welfare transport organisation is defeated.

## 5) Reservation in Jobs

- The private investor is not bound to follow reservation regulations in employment.
- This, in turn, will deprive employment opportunities for those who are on the margins of society.

## 6) Limited Coverage:

- An advantage of Indian Railways being government-owned is that it provides nation-wide connectivity irrespective of profit.
- Privatisation of railways would mean the railways will become a profit-making enterprise, this would lead to the elimination of railways routes that are less popular.
- Thus, the privatisation of railways can have a negative impact on connectivity and further increase the rural-urban divide.

## 7) Impact on the Economy:

- Indian Railways is the backbone of India, it provides low fare transportation to agricultural and industrial trade.
- Therefore, privatisation of Indian railways shall definitely affect the Indian economy at large.

## Way forward

- There should be no need for the government to take a dual role of a facilitator as well as a participant.
- In the case of the metro railway services, Hyderabad, for example, an ideal PPP project, the concessionaire is solely responsible for daily maintenance, operation, passenger amenities and staff issues.
- The State government steps in when it comes to land, power, permissions, law and order, etc. Fare determination is in consultation with the government.

- Instead of a private entrepreneur, Indian Railway Catering and Tourism Corporation , a government undertaking which has gained experience in running the Tejas Express trains, could have been given the role.
- Core Railways functions can be Corporatized rather than privatized.
- Corporatization refers to the restructuring or transformation of a state-owned asset or organization into a corporation. These organizations typically have a board of directors, management, and shareholders.
- However, unlike publicly traded companies, the government is the company's only shareholder, and the shares in the company are not publicly traded.

*Consider the question "Indian Railways often hailed as the lifeline of the country continues suffering from several issues. In light of this, evaluate the pros and cons of the privatisation of railways."*

## Conclusion

This project of privatisation of trains should not result in the common man being deprived of travel facilities. The Indian Railways is a strategic resource for the nation hence it should not be judged solely on its profit-generating capability or market-based return on investment.

## B2BASICS

### Some Recommendations of the Bibek Debroy Committee

- Transition to commercial accounting: The process of accounting in Indian Railways is very complicated.
- The financial statements of Indian Railways need to be redrawn, consistent with principles and norms nationally and internationally accepted.
- The non-core function of railways must be privatized: These activities include running hospitals and schools, catering, real estate development, including housing, construction and maintenance of infrastructure, manufacturing locomotives, coaches, wagons and their parts.
- Expansion of Indian Railways Manufacturing Company: According to Debroy, wagons are already produced by the private sector. Coaches and locomotives could follow. Unless they are freed from 59 their constraints, the existing production units will be unable to face this competition.
- Encouraging private entry: Private entry into running both freight and passenger trains in competition with Indian railways should be allowed and private participation.
- Independent regulator: Shift regulatory responsibility from the government to an independent regulator as the private sector will only come in if there is fair and open access to railway infrastructure.

# Comparing fiscal responses to Covid on qualitative and quantitative basis

Economics | GS3: Indian Economy

Note4Students | From UPSC perspective, the following things are important :

Prelims level : Not much

Mains level : Paper 3- India fiscal response to Covid-19

For all the talks over the size of Atmanirbhar package, India's response turns out to be inadequate when compared with the other countries with similar levels of per capita income. This article analyses the same.

## Context

- India's fiscal response is compared to countries which are similar in GDP per capita, state capacity, and structure of the labour force.
- Before the Atmanirbhar Bharat package, India lagged significantly behind comparable developing countries.
- As of early July, the gap seems to have narrowed.

## Comparison and challenges

- Due to the blurring of the distinction between fiscal and monetary components , ensuring comparable and accurate figures for fiscal responses is a challenge.
- For example, the total Atmanirbhar package is billed at 10% of GDP by the government.
- While the headline number for Indias fiscal response in international databases is around 4% of GDP.
- But some estimated that the new fiscal outlay is around 1.7% of GDP.
- Vietnam, Indonesia, Pakistan, and Egypt, all while averaging less stringent measures than those in India, have announced stimulus measures that are as large or more substantial, as a share of GDP.

## Demand-side interventions in the package

- The one significant demand-side intervention in the Atmanirbhar Bharat package was 40,000 crore of additional outlay for the MGNREGA.
- Most other demand-side measures involve the frontloading, consolidation, or rerouting of existing funds.

## How developing countries are financing responses

- Developing countries are resorting to drastic means to finance COVID-19 responses.
- Actions so far include the amendment of legal budget limits.
- Some are also exploring enhanced issuance of bonds-including a pandemic bond by Indonesia.
- Central banks in many emerging economies are experimenting with purchases of public and private bonds in the secondary market (quantitative easing).
- Or some are directly purchasing government bonds on the primary market (monetising the deficit).
- In India, the debate continues over whether the Indian government should invoke the escape clause in the FRBM Act.
- Escape clause will enable the central bank to directly finance the deficit.

## Cash transfer: Lessons for India

- Demand-side interventions announced by other developing countries could provide lessons for additional measures in India.
- Of the World Banks list of 621 measures across 173 countries, half were cash-based.
- While only 2% related to public works, a clear indication of the popularity of cash transfers over public works for income support,
- Countries have also significantly expanded coverage of their cash transfer programmes from pre-COVID-19 levels.
- Bangladesh and Indonesia have increased the number of beneficiaries by 163% and 111%, respectively.
- Indonesia's cash schemes now cover more than 158 million people or 60% of the population.
- Additionally, the Indonesia central government has directed village authorities to focus their budgets on a cash-for-work programme.

## Suggestions for India

- India could take these actions about cash transfers into account in decisions about expanding existing transfer programmes or even creating new ones.
- India has been a leader in employment guarantee policies with its flagship MGNREGA programme.
- This is the right time to expand entitlements MGNREGA.
- There is a need to introduce an urban version of the MGNREGA.
- In India, one reason for the subdued fiscal response and the resort to monetary measures is a concern with the debt-to-GDP ratio.
- However, aggregate demand and confidence in the economy have slumped and may not recover for many months.
- Additional fiscal outlay -would save lives and jobs today and might prevent a protracted slowdown.

*Consider the question "How India fares in comparison with other countries over its fiscal response to Covid? Also examine the utility of income support schemes related to public works against the cash transfer schemes adopted by the other countries."*

## Conclusion

Not spending more now, therefore, might only worsen the debt-to-GDP ratio if growth remains depressed. The fiscal outlay in the form of cash and in-kind transfers and expanded public works schemes is the need of the hour.

Original op-ed: <https://www.thehindu.com/opinion/op-ed/the-covid-19-fiscal-response-and-indias-standing/article32154153.ece>

# What are Strategic and Non-strategic Sectors of Industries?

Economics | GS3: Effects Of Liberalization On The Economy, Changes In Industrial Policy and their effects on Industrial Growth

Note4Students | From UPSC perspective, the following things are important :

Prelims level : Strategic and non-strategic sectors

Mains level : Disinvestment of CPSEs

The government will soon come out with a policy on strategic sectors and simultaneously kick into motion a process of complete privatization for companies in the non-strategic sectors.

## Try this question for mains:

Q. "Privatisation of CPSEs can lead to the conversion of public monopoly to a private monopoly." Analyse.

## What are Strategic and Non-strategic Sectors of India?

- An industry is considered strategic if it has large innovative spillovers and if it provides a substantial infrastructure for other firms in the same or related industries.
- Earlier, the strategic sectors were defined on the basis of industrial policy.
- The government classified Central Public Sector Enterprises (CPSEs) as strategic and non-strategic on the basis of industrial policy that keeps on changing from time-to-time.

## According to this, the Strategic sector PSUs are:

- Arms & Ammunition of defence equipment
- Defence aircraft & warships
- Atomic energy

- Applications of radiation to agriculture, medicine and non-strategic industry
- Railways

Banking, insurance, defence, and energy are likely to be part of the strategic sector list. All other PSUs apart from the strategic sectors fall under Non-strategic Sector including Power Discoms.

## A change in policy post-Atmanirbhar

- Under the Self-sufficiency move, the proposed policy would notify the list of strategic sectors requiring the presence of at least one state-owned company along with the private sector.
- In all other sectors, the government plans to privatize public sector enterprises, depending upon the feasibility.
- The number of enterprises in strategic sectors will be only one to four, and others would be privatized/merged/brought under a holding company structure.

## Will it help privatization?

- The government has already set in motion privatization plans for large PSU companies BPCL, Air India, Container Corporation of India, and Shipping Corporation of India.
- Budget 2020-21 had announced plans to sell part of the Centres stake in LIC through an initial public offer (IPO), and the sale of equity in IDBI Bank to private, retail and institutional investors.
- The emphasis on privatization could see companies in chemicals and infrastructure space being privatized, while the government has stated its intent to reduce the number of state-owned banks.
- This could see some smaller banks being privatized in due course.

## MICROFINANCE STORY OF INDIA

# Open Credit Enablement Network (OCEN)

Economics | GS3: Indian Economy

Note4Students | From UPSC perspective, the following things are important :

Prelims level : Open Credit Enablement Network (OCEN)

Mains level : Credit facilities for MSMEs

A new credit protocol infrastructure called the OCEN protocol is set to be launched very soon.

Practice question for mains:

Q. What is Open Credit Enablement Network (OCEN)? How it is expected to be a gamechanger in the micro-credit facilitation services in India?

## Open Credit Enablement Network (OCEN)

- OCEN is a credit protocol infrastructure, which will mediate the interactions between loan service providers, usually fintech and mainstream lenders, including all large banks and NBFCs.
- It is developed by a think tank, Indian Software Products Industry Round Table (iSPiRT).
- With this, a credit will become more accessible for a large number of entrepreneurs and small businesses in the country.
- Private equity and venture capital players, angel investors, high net worth individuals and others also could be part of this exercise as investors.

## How will it work?

- iSpirit is partnering with key leaders such as SBI, HDFC Bank Ltd., ICICI Bank Ltd., IDFC First Bank Ltd., Axis Bank Ltd. etc. for this new credit rail.
- Account Aggregators which will be using these APIs to embed credit offerings in their applications, and will be called Loan Service Providers, which will play a crucial role in democratizing access to credit, and lowering interest rates for customers.

## Why need OCEN?

- The cost of lending being too high in India, small value loans becomes very unfeasible.
- OCEN which seeks to connect lenders to marketplaces and thereby to borrowers is a technology system.
- If implemented, the technology can democratize lending to micro-enterprises and street vendors in a big way.

ECONOMIC INDICATORS AND VARIOUS REPORTS ON IT- GDP, FD, EODB, WIR ETC

# Gold and forex reserves cannot finance stimulus

Economics | GS3: Indian Economy

Note4Students | From UPSC perspective, the following things are important:  
Prelims level : Debt monetisation, RBI balance sheet etc  
Mains level : Paper 3-Ways to raise funds to finance the stimulus package

The article analyses the issues with suggestions like printing of currency and using forex reserves to finance the stimulus. They also lead to an increase in government debts.

## Context

- Prime Minister announced a stimulus package of 20 trillion to fight the economic fallout of the covid pandemic.
- Since then, several unorthodox ideas have been floated to raise funds for it without straining government finances.
- Among the suggestions are the printing of currency, and using foreign exchange reserves or household gold.

## Let's look at entries in the RBI's balance sheets

- On the liabilities side of it is the currency in circulation, commercial bank reserves and government reserves.
- On the asset side of it is forex reserves, government securities and gold.
- The balancing item represents the central banks equity and accumulated surplus.

Let's look at 3 options suggested above and issues with them-

### 1) Printing currency

- Doing this would increase the liabilities of the RBI under "currency in circulation".
- But it first needs to acquire assets to offset this increase in liability.
- These assets could be government securities, forex reserves or gold.
- Thus, one way for the government to finance its expenditure would be to issue government bonds and ask RBI to print currency with which to subscribe to such bonds.
- This is known as deficit monetization.
- It is important to note that for the central bank to print money, the government would have to issue bonds to it.
- It will increase government debt.

### 2) Monetisation of gold held by household

- This would first involve the government buying gold from households in exchange for its bonds.

- Then, the accumulated gold would be bought by RBI from the government with newly printed currency.
- In this case, instead of creating new money to acquire government bonds, RBI would be doing the same to acquire gold.
- This too involves the Centre taking on additional debt.
- Moreover, gold monetization schemes in the past have yielded only mild success.

### 3) Using RBI's forex reserves

- Against every dollar of forex reserves shown by RBI on the asset side, an equivalent rupee amount has already been created on the liability side.
- This is because whenever RBI acquires foreign currency, it pays for it using the Indian rupee.
- Thus, no additional currency can be printed against such already-acquired reserves.
- The only way our forex reserves can be used for generating additional resources is by pledging them to a third party.
- The pledging of RBIs assets to raise funds is done only under extreme circumstances, for instance, during the 1991 balance of payments crisis.
- We are certainly not in a situation that warrants a repeat of an exercise where RBIs assets, be it gold or forex reserves, have to be mortgaged.

## So, what is the way out?

- There are only three ways to finance government expenditure: taxes, debt and asset sales.
- Taxes and asset sales can pitch in a bit towards the stimulus bill.

Consider the question "Examine the ways in which government can raise the funds to finance the stimulus package and also discuss the issues with each move."

## Conclusion

There is no escaping the fact that we are staring at a higher build-up of government debt in the future. When we stop harbouring the notion that we can pay the stimulus bill without any deterioration in government finances, we will be able to see the bitter truth: There is no such thing as a free lunch.

# RBI signs \$400 mn currency swap facility for Sri Lanka

Economics | GS3: Indian Economy

Note4Students | From UPSC perspective, the following things are important:  
Prelims level : Currency Swap  
Mains level : Cryptocurrency and its feasibility

The RBI has agreed to a \$400 million currency swap facility for Sri Lanka till November 2022.

## Practice question for mains:

*Q. What are Currency Swaps? Discuss the efficacy of Currency Swap Agreements for liberalizing bilateral trade.*

## Why such move by RBI?

- The RBIs action follows a recent bilateral technical discussion on rescheduling Colombo's outstanding debt repayment to India.
- Following the outbreak of COVID-19 in the region, India had proposed a virtual meeting to discuss the request. Sri Lanka owes \$960 million to India.
- In turn, Sri Lanka would facilitate, protect and promote a liberal ecosystem for Indian investors.

## What are Currency Swaps?

- A currency swap, also known as a cross-currency swap, is an off-balance sheet transaction in which two parties exchange principal and interest in different currencies.
- Currency swaps are used to obtain foreign currency loans at a better interest rate than could be got by borrowing directly in a foreign market.

## How does it work?

- In a swap arrangement, RBI would provide dollars to a Lankan central bank, which, at the same time, provides the equivalent funds in its currency to the RBI, based on the market exchange rate at the time of the transaction.
- The parties agree to swap back these quantities of their two currencies at a specified date in the future, which could be the next day or even three months later, using the same exchange rate as in the first transaction.
- These swap operations carry no exchange rate or other market risks, as transaction terms are set in advance.

## Why does one need dollars?

- FPIs investors look for safer investments but the current global uncertainty over COVID outbreak has led to a shortfall everywhere in the global markets.
- This has pulled down foreign exchange reserves of many small and developing countries.
- This means that the government and the RBI cannot lower their guard on the management of the economy and the external account.

## Benefits of currency swap

- The absence of an exchange rate risk is the major benefit of such a facility.
- This facility provides the flexibility to use these reserves at any time in order to maintain an appropriate level of balance of payments or short-term liquidity.
- Swaps agreements between governments also have supplementary objectives like the promotion of bilateral trade, maintaining the value of foreign exchange reserves with the central bank and ensuring financial stability (protecting the health of the banking system).

# GOVERNANCE

CORONAVIRUS - HEALTH AND GOVERNANCE ISSUES

## [pib] Manodarpan Initiative

Governance | GS2: Health & Education

Note4Students | From UPSC perspective, the following things are important:  
Prelims level : Manodarpan Initiative  
Mains level : Mental health concerns raised by the COVID-19 pandemic

The Union HRD Ministry will launch the Manodarpan Initiative, today.

*Try this question from CSP 2016:*

- Q.'Rashtriya Garima Abhiyaan is a national campaign to:  
(a) rehabilitate the homeless and destitute persons and provide them with suitable sources of livelihood  
(b) release the sex workers from their practice and provide them with alternative sources of livelihood  
(c) eradicate the practice of manual scavenging and rehabilitate the manual scavengers  
(d) release the bonded labourers from their bondage and rehabilitate them

- It contains advisory, practical tips, posters, videos, do's and don'ts for psychosocial support, FAQs and online query system.
- It aims to provide psychosocial support to students for their mental health and well-being.
- It has been included in the Atmanirbhar Bharat Abhiyan, as a part of strengthening human capital and increasing productivity and efficient reform and initiatives for the education sector.
- A toll-free helpline will also be launched as part of the initiative for a country-wide outreach to students from schools, colleges and universities.
- Through this helpline, tele-counselling will be provided to the students to address their mental health and psychosocial issues.

## **Manodarpan Initiative**

- 'Manodarpan' covers a wide range of activities to provide psychosocial support to students, teachers and families for Mental Health and Emotional Wellbeing during the COVID outbreak and beyond.

EXPLAINED: CONSUMER PROTECTION ACT, 2019

# **Explained: Consumer Protection Act, 2019**

Governance | GS2: Governance, Transparency & Accountability, Citizens Charters

Note4Students | From UPSC perspective, the following things are important :  
Prelims level : Features of the Consumer Protection Act, 2019  
Mains level : Consumer protection legislation in India

The Consumer Protection Act, 2019 has come into effect from July 20, replacing the earlier Consumer Protection Act, 1986.  
What are the Rights of the Consumers?

## **Try this question from our AWE initiative**

<https://www.civilsdaily.com/mains/compare-and-contrast-the-consumer-protection-act-1986-with-that-of-the-consumer-protection-bill-2018-how-far-do-you-think-the-changes-made-are-consumer-centric-towards-benefiting-the-consumer-more-e/>

## **Consumer Protection Act, 2019: Key Features**

### **1) Definition of consumer**

- A consumer is defined as a person who buys any good or avails a service for a consideration.
- It does not include a person who obtains a good for resale or a good or service for commercial purpose.
- It covers transactions through all modes including offline, and online through electronic means, teleshopping, multi-level marketing or direct selling.

### **2) Rights of consumers**

- The following consumer rights have been defined in the Act, including the right to:
- be protected against marketing of goods and services which are hazardous to life and property;
- be informed of the quality, quantity, potency, purity, standard and price of goods or services;
- be assured of access to a variety of goods or services at competitive prices; and

seek redressal against unfair or restrictive trade practices.

### **3) Establishment of Central Consumer Protection Authority**

- The central government will set up a CCPA to promote, protect and enforce the rights of consumers.
- It will regulate matters related to violation of consumer rights, unfair trade practices, and misleading advertisements.
- The CCPA will have an investigation wing, headed by a Director-General, which may conduct inquiry or investigation into such violations.

### **4) Penalties for misleading advertisement**

- The CCPA may impose a penalty on a manufacturer or an endorser of up to Rs 10 lakh and imprisonment for up to two years for a false or misleading advertisement.
- In case of a subsequent offence, the fine may extend to Rs 50 lakh and imprisonment of up to five years.
- CCPA can also prohibit the endorser of a misleading advertisement from endorsing that particular product or service for a period of up to one year.
- For every subsequent offence, the period of prohibition may extend to three years.

### **5) Consumer Disputes Redressal Commission**

- CDRCs will be set up at the district, state, and national levels.
- A consumer can file a complaint with CDRCs in relation to: unfair or restrictive trade practices; defective goods or services etc.
- Complaints against an unfair contract can be filed with only the State and National Appeals from a District CDRC will be heard by the State CDRC.
- Appeals from the State CDRC will be heard by the National CDRC. Final appeal will lie before the Supreme Court.

## 6) Jurisdiction of CDRCs

- The District CDRC will entertain complaints where value of goods and services does not exceed Rs one crore.
- The State CDRC will entertain complaints when the value is more than Rs one crore but does not exceed Rs 10 crore.
- Complaints with value of goods and services over Rs 10 crore will be entertained by the National CDRC.

## 7) Product liability

- Product liability means the liability of a product manufacturer, service provider or seller to compensate a consumer for any harm or injury caused by a defective good or deficient service.
- To claim compensation, a consumer has to prove any one of the conditions for defect or deficiency, as given in the Act.

CORONAVIRUS - HEALTH AND GOVERNANCE ISSUES

# COVID-19 Law Lab

Governance | GS2: Health & Education

Note4Students | From UPSC perspective, the following things are important:  
Prelims level : COVID-19 Law Lab  
Mains level : Health Policy measures against COVID-19

The UN agencies have started a portal called the COVID-19 Law Lab to host all recent legal enactments to fight the novel coronavirus disease (COVID-19) pandemic.

Note the following things about COVID-19 Law Lab:

1) It is an online portal and not a cubical laboratory 2) Parent agency includes the UN and WHO 3) It is the first collation of health-related laws and protocols of the countries

## COVID-19 Law Lab

- This digital portal hosts all legal steps taken by 190 countries to fight the pandemic.
- The UNDP, the WHO, the Joint UN Programme on HIV/AIDS and the O'Neill Institute for National and Global Health Law at Georgetown University have collaborated for this initiative.

- The collation initiative aims at dissemination of procedures and practices for effective enactment of health-related laws.
- It is expected to be the most expansive collation of laws and procedures related to a health emergency.

## Why need such a repository?

- The pandemic has led to confusion over treatment and management protocols.
- Some 220 countries/territories have enacted various procedures backed by various enabling laws related to epidemics and health emergency.
- Laws and policies that are grounded in science, evidence and human rights can enable people to access health services, protect themselves from COVID-19 and live free from stigma, discrimination and violence.
- Sharing medicines and formulae for even general treatment has been a big challenge due to restrictive laws and trade practices.
- As health is global, legal frameworks need to be aligned with international commitments to respond to current and emerging public health risks.

WOMEN EMPOWERMENT ISSUES - JOBS,RESERVATION AND EDUCATION

# Women officers can now get permanent commission in Indian Army

Governance | GS2: Governance, Transparency & Accountability, Citizens Charters

Note4Students | From UPSC perspective, the following things are important:  
Prelims level : SSC/PC  
Mains level : Debate over suitability of women in combat roles of Indian Army

The Ministry of Defence (MoD) has issued the formal Government Sanction Letter for grant of Permanent Commission (PC) to women officers in the Army.

## Try this question for mains:

Q. Concern for equality of sexes or political expediency should not influence defence policies. Discuss on lines with the debate over the induction of women in the armed forces.

Also read: <https://www.civilsdaily.com/burning-issue-women-in-armed-forces/>  
<https://www.civilsdaily.com/burning-issue-women-in-armed-forces/>

## Why such an order?

- The order follows a Supreme Court verdict in February that directed the government that women Army officers be granted PC and command postings in all services other than combat.
- Following this, Army Chief had said it was an enabling one and gives a lot of clarity on how to move forward.
- He had stated that the same procedure for male SSC officers will be followed for women to give PC.

## Women in Army: Background of the case

- The induction of women officers in the Army started in 1992.
- They were commissioned for a period of five years in certain chosen streams such as Army Education Corps, Corps of Signals, Intelligence Corps, and Corps of Engineers.
- Recruits under the Women Special Entry Scheme (WSES) had a shorter pre-commission training period than their male counterparts who were commissioned under the Short Service Commission (SSC) scheme.
- In 2006, the WSES scheme was replaced with the SSC scheme, which was extended to women officers. They were commissioned for a period of 10 years, extendable up to 14 years.
- Serving WSES officers were given the option to move to the new SSC scheme or to continue under the erstwhile WSES.
- They were to be, however, restricted to roles in streams specified earlier which excluded combat arms such as infantry and armoured corps.

## 2 key arguments shot down

- The Supreme Court rejected arguments against a greater role for women officers, saying this violated equality under the law.
- They were being kept out of command posts on the reasoning that the largely rural rank and a file will have problems with women as commanding officers. The biological argument was also rejected as disturbing.
- While male SSC officers could opt for permanent commission at the end of 10 years of service, this option was not available to women officers.
- They were, thus, kept out of any command appointment, and could not qualify for a government pension, which starts only after 20 years of service as an officer.
- The first batch of women officers under the new scheme entered the Army in 2008.

## Arguments by the Govt

- The Centre had mentioned several reasons behind the differential treatment of women officers.
- It had proposed that women officers with up to 14 years of service would be granted a permanent commission, while those above 14 years would be permitted to serve for up to 20 years and retire with pension without being considered for permanent commission.
- It also stated that those with more than 20 years of service would immediately be released with pension
- This order did not grant permanent commission to women with over 14 years of service, and hence discriminatory.
- Furthermore, the 2019 order granted permanent commission only for staff appointments and not command appointments.
- The centre justified this by stating that that the units in Army are composed entirely of male soldiers, who are mostly from rural backgrounds and thus, are not mentally prepared to accept women officers in the command of units.

- It also stated that the lower physical capacity of women officers would be a challenge for them to command units wherein officers are expected to lead the men from the front and need to be in prime physical condition to undertake combat tasks.
- The government also stated that the adverse conditions, including two unsettled borders and internal security situations in the northeast and Jammu and Kashmir, have a major bearing on the employment of women officers in light of their physiological limitations.
- Also, it had stated that the isolation and hardships would eat into their resolve and that they have to heed to the call of pregnancy, childbirth and family.
- The government also argued that women ran the risk of capture by the enemy and being taken as prisoners of war.

## SC Criticized the Government's Note

- Reflects Poorly on Women: The note had shown women officers in a poor light, saying isolation and hardships would eat into their resolve and that they would have to heed to the call of pregnancy, childbirth and family. The note had mentioned that women ran the risk of capture by enemy and taken prisoner of war.
- Patriarchal Notion: The court held that the note reflected the age-old patriarchal notion that domestic obligations rested only with women.
- Sex Stereotype: The court also dismissed the point that women are physiologically weaker than men as a sex stereotype.
- Offence to dignity of Indian Army: The court noted that challenging abilities of women on the ground of gender is an offence not only to their dignity as women but to the dignity of the members of the Indian Army men and women who serve as equal citizens in a common mission.

## Implications of the judgement

- The SC did away with all discrimination on the basis of years of service for grant of PC in 10 streams of combat support arms and services, bringing them on a par with male officers.
- It has also removed the restriction of women officers only being allowed to serve in staff appointments, which is the most significant and far-reaching aspect of the judgment.
- It means that women officers will be eligible to the tenant all the command appointments, at par with male officers, which would open avenues for further promotions to higher ranks for them.
- It also means that in junior ranks and career courses, women officers would be attending the same training courses and tenanting critical appointments, which are necessary for higher promotions.

## Back2Basics: Permanent Commission (PC) Vs. Short Service Commission (SSC)

- SSC means an officer's career will be of a limited period in the Indian Armed Forces whereas a PC means they shall continue to serve in the Indian Armed Forces, till they retire.
- The officers inducted through the SSC usually serve for a period of 14 years. At the end of 10 years, the officers have three options.
- A PC entitles an officer to serve in the Navy till he/she retires unlike SSC, which is currently for 10 years and can be extended by four more years, or a total of 14 years.
- They can either select for a PC or opt-out or have the option of a 4-year extension. They can resign at any time during this period of 4 years extension.

# False urban rural binary

Governance | GS2: Urbanization, Their Problems & Remedies

Note4Students | From UPSC perspective, the following things are important:  
 Prelims level : AMRUT  
 Mains level : Paper 1-Urbanisation and issues

The article brings out the issues in the rural-urban binary, which leads to the disparity in the allocation of resources to the urban areas.

## Congestion and health issues in cities

- The congestion in large cities has turned out to be their worst enemy during this pandemic.
- Congestion is most evident in slums in large cities and poses a grave health and environmental challenges.
- Yet, the Centres allocation for the rural component of the Swachh Bharat Mission is about seven times more than for urban areas.
- Class I cities have 1.4 beds per 1,000 people. (with the population more than 1 lakh)
- However, the urban support under the National Health Mission is just three per cent of the total allocation, while 97 per cent of the funds are set aside for rural areas.

## Issues with the present urban development programs

- The Jawaharlal Nehru National Urban Renewal Mission (2005-2014) allocated the bulk of funds to large cities: 70 per cent to large cities and 30 per cent to smaller towns.
- Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and the Smart Cities Mission, focus on Class I cities.
- Both these schemes provide funds for the more developed cities that already have relatively better infrastructure.
- But these schemes overlook the nearly seven crore people who live in smaller towns.
- These are towns that lag behind in services and infrastructure as compared to the big cities.

*Consider the question "The rural-urban binary has led to the policy formulation in which there is a huge disparity in the allocation of resources and attention on the urban area. Comment."*

Conclusion The pandemic has forced us to reflect on the unequal and unplanned development of urban settlements and the absence of infrastructure to provide for the teeming millions. The challenges of urban poverty and congestion cry for more attention, more government support. Original article: <https://indianexpress.com/article/opinion/columns/coronavirus-covid-19-pandemic-india-urban-cities-6520574/>

SKILLING INDIA - SKILL INDIA MISSION, PMKVY, NSDC, ETC.

# [pib] Kumhar Sashaktikaran Yojana (KSY)

Governance | GS2: Schemes For Vulnerable Sections

Note4Students | From UPSC perspective, the following things are important:  
 Prelims level : Kumhar Sashaktikaran Yojana (KSY)  
 Mains level : Welfare schemes for various vulnerable sections of population

The Centre has distributed 100 electric potter wheels to 100 trained artisans under the KSY.

*Try this question from CSP 2018:*

- Q. Consider the following provisions under the Directive Principles of State Policy as enshrined in the Constitution of India:
1. Securing for citizens of India a uniform civil code.
  2. Organising village panchayats.
  3. Promoting cottage industries in rural areas.
  4. Securing for all the workers reasonable leisure and Cultural opportunities.

Which of the above are the Gandhian Principles that are reflected in the DPSP?

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

## Kumhar Sashaktikaran Yojana

- KSY is an initiative of the Khadi and Village Industries Commission (KVIC) for the empowerment of potters community in the remotest of locations in the country.
- It reaches out to the potters in U.P., M.P., Maharashtra, J&K, Haryana, Rajasthan, West Bengal, Assam, Gujarat, Tamil Nadu, Odisha, Telangana and Bihar.

## Benefits provided

This program provides the following support to potters.

- Training for advanced pottery products
- Latest, new technology pottery equipment like the electric Chaak
- Market linkages and visibility through KVIC exhibitions

## Back2Basics: KVIC

- The KVIC is a statutory body formed in April 1957 under the 'Khadi and Village Industries Commission Act of 1956'.
- It is an apex organisation under the Ministry of Micro, Small and Medium Enterprises, with regard to khadi and village industries within India.

- It seeks to plan, promote, facilitate, organise and assist in the establishment and development of khadi and village industries in the rural areas.
- Its head office is in Mumbai, whereas its six zonal offices in Delhi, Bhopal, Bangalore, Kolkata, Mumbai and Guwahati.

CORONAVIRUS - HEALTH AND GOVERNANCE ISSUES

## In news: National Centre for Disease Control (NCDC)

Governance | GS2: Health & Education

Note4Students | From UPSC perspective, the following things are important :

Prelims level : NCDC and its formation

Mains level : Institutional failures in NCDC

Indias premier organisation mandated to collect data about diseases, the NCDC is failing in its task as the spread of COVID-19 continues unabated.

### Practice question for mains:

*Q. Health infrastructure in India is hardly capable of handling any pandemic. Critically comment.*

### About the National Centre for Disease Control

- The NCDC carries out nationwide disease surveillance through its Integrated Disease Surveillance Programme (IDSP).
- It is a vertical programme under Directorate General of Health Services.

### Its formation

- This programme has been present in the country in different avatars since 1997 when the National Surveillance Programme for Communicable Diseases was set up.
- This was upscaled to the Integrated Disease Surveillance Project in 2004, with assistance from the World Bank, to address the demands of the WHOs International Health Regulations, 2005.

- Under this, each country had to assess public health emergencies of international concern within 48 hours and report them to WHO within the next 24 hours.
- It was then included in the 12th Plan (2012-17) under the Union Health Ministry and renamed IDSP.

### Mandate of the NCDC

To aid the process of an investigation, NCDC has put down 10 steps that need to be followed for each outbreak:

- Determine the existence of an outbreak
- Confirm the diagnosis
- Define a case
- Search for cases
- Generate hypothesis using descriptive findings
- Test hypothesis with the analytical study
- Draw conclusions
- Compare hypothesis with established facts
- Communication of findings
- Execute preventive measures

### Why did NCDC fail?

- IDSPs manual says weekly and monthly updates are mandatory for each State and UTs even if no outbreaks are reported.
- But this has never been observed to date.
- There is an overlap between the diseases being followed by IDSP and other agencies like the National Vector Borne Disease Control Programme
- The fact that IDSP does not collect mortality data was also a concern. Moreover, the IDSP was not investigating zoonotic diseases.

## Judicial intervention in Anti-defection Proceedings

Polity | GS2: Indian Constitution - historical underpinnings, evolution, features, amendments, significant provisions and basic structure

Note4Students | From UPSC perspective, the following things are important :  
Prelims level : Tenth Schedule  
Mains level : Issues over Judicial discretion in Anti-defection

A Supreme Court Bench is scheduled to hear an appeal filed by the Rajasthan Assembly Speakers office challenging the State High Court order to defer anti-defection proceedings against former Deputy CM.

### Try these questions:

- Q. The anti-defection law works best as an insurance against violation of the peoples mandate for a party, but it cannot be made a tool to stifle all dissent. Discuss.  
Q.Which one of the following Schedules of the Constitution of India contains provisions regarding anti-defection? (CSP 2014)  
(a) Second Schedule (b) Fifth Schedule (c) Eighth Schedule  
(d) Tenth Schedule

### What is the issue?

- The petition said the HC has crossed its jurisdiction by asking the Speaker to put off his decision on the disqualification notices issued to dissident MLAs.
- The HC order was an affront to the powers of the Speaker.
- The High Courts interim order granting extended time to rebel MLAs to file their replies to anti-defection notices amounted to a violation of Article 212 (courts not to inquire into the proceedings of the legislature).

### Historical background

- The President of India made a presidential reference to the Supreme Court on the relative powers of legislative assemblies and constitutional courts.
- The Supreme Court held that there is a broad separation of essential powers of each organ of the State.
- However, the Court went on to hold that a judge who entertains a petition challenging any order of the legislature does not commit contempt of the said legislature.
- Since then court have restrained themselves from interfering in the workings of legislative assemblies or Parliament is concerned.
- The sole exception is under the anti-defection law- after a final order of disqualification has been passed.

### Citing the Kihoto Hollohan case

- The petition referred to the Constitution Bench judgment of the top court in the Kihoto Hollohan case in 1992 in this context.
- Judicial review cannot be available at a stage prior to the making of a decision by the Speaker/Chairman and a prior action would not be permissible.
- Nor would interference be permissible at an interlocutory stage of the proceedings, the verdict says.

### Co-equality of Constitutional authorities

- Rajasthan assembly Speaker moved the Supreme Court, questioning the courts power to direct a Constitutional authority.
- The principle of law applied is that Constitutional authorities cannot issue directions to each other.
- They can, at best, make a polite request.
- The single judge in Calcutta, recorded in his judgment that the Supreme Court was only co-equal with the High Court, as a Constitutional Court.
- Appellate powers of the Supreme Court did not make it a superior authority to which the High Court was subordinate.
- Ever since, the Supreme Court has been careful to couch its orders as requests to any High Court, or Constitutional authority.
- Constitutional courts have followed the same principle, in addressing other Constitutional authorities.

### Role of judiciary in maintaining the balance

- Unnecessary conflict between organs of state may well invite some Speaker, backed by a solid majority at State and Centre, to defy the courts.
- Courts are apolitical but keep getting pulled into political thickets, especially in matters of mass defections resulting in regime change.
- The walls of separation between constitutional organs, once breached, cannot be then repaired against future intrusions.

*Consider the question Analyse fine balance Indian Constitution strikes between the various Constitutional authorities. Also examine how role of judiciary in dealing with the anti-defection law.*

### Conclusion

Even under a sovereign Constitution, parliamentary and legislative supremacy in their areas of working must be respected.

### Must read:

<https://www.civilsdaily.com/news/kihoto-hollohan-order-1992/>

### What does the dissident MLAs have to say?

- The dissident MLAs had challenged the constitutionality of Paragraph 2(1)(a) of the Tenth Schedule which makes voluntarily giving up membership of a political party liable for disqualification.

- The MLAs had argued that the provision infringed their right to dissent.
- But the Speakers office countered that Paragraph 2 (1)(a) of the Tenth Schedule was the law of the land.
- A mere challenge to its constitutionality cannot efface it from the statute book.

### ANTI DEFLECTION LAW

## Time to revisit the practice of floor test

Polity | GS2: Parliament & State Legislatures

Note4Students | From UPSC perspective, the following things are important :

Prelims level : Provisions under 10th Schedule

Mains level : Paper 2- Anti-defection law, 10th Schedule

The growing trend of the toppling of the government by luring the MLAs of ruling party. The SC needs to reconsider the floor test usually ordered in such cases. The article analyses this issue here.

### Reading Article 191(2) and 10th Schedule

- Article 191(2) declares that a person shall be disqualified from being a member of the legislative assembly or legislative council of a state if he is so disqualified under the Tenth Schedule.
- The Tenth Schedule to the Constitution contains provisions as to disqualification on ground of defection.
- Tenth Schedule also fixes the relationship between a member and a political party which selected him as a candidate.
- It also provides one of the grounds for disqualification: If he voluntarily gives up his membership of such political party.
- The decision as to disqualification is left to the absolute discretion of the Speaker.

### Constitutional morality and 10th Schedule

- Tenth Schedule brings to the fore the need to emphasise constitutional morality.
- Constitutional morality means strict adherence to the core principles of constitutional democracy .

- So, Constitutional transgressions by MLAs coming through a party platform to serve the people for five years (Article 172), cannot be accepted.
- In so doing, these MLAs forget the oath, taken under Article 188 of the Constitution to bear true faith and allegiance to the Constitution of India as established by law.
- Legislators do not have absolute freedom to behave in any way they like.

### Issues with the floor test

- When ruling party MLAs are lured with rewards, political or otherwise, then the floor test becomes constitutionally immoral and unjust.
- This will amount to circumventing the Tenth Schedule through engineered defections through the judicial process.
- It is high time the judiciary revisited the use of a floor test to prove a majority in a legislature.

*Consider the question "Examine the ways in which a member of the house is deemed to have given up his membership under the 10th Schedule as interpreted in the various judgements. Also, analyse the implications of conducting a floor test in a situation when members of the ruling party are lured with rewards."*

### Conclusion

Judiciary must take note of the toppling of the majority government through luring of the MLAs and subsequent floor test by the courts. The floor test in such a situation needs reconsideration.

### CASE FOR PRESIDENTIAL SYSTEM

## Case for presidential system

Polity | GS2: Comparison Of The Indian Constitutional Scheme With That Of Other Countries,Executive & Judiciary

Note4Students | From UPSC perspective, the following things are important :

Prelims level : Parliamentary vs presidential system

Mains level : Paper 2- Issues with the parliamentary system of government

It is argued by some section of the society that the political system in India was created based entirely on British parliamentary democracy and their experience of what they themselves were deprived of. So, according to these people, the Westminster model of democracy is not suited to our reality.

## Why India adopted Parliamentary system in 1947?

### Familiarity:

India has been familiar with its working during the times of British Rule. The type of government that functioned in India before independence in 1947 was very much similar to the British model of parliamentary. The framers of the constitution were greatly influenced by the English system. Therefore, the members of the Constituent Assembly decided to adopt this form of government for the independent India.

### Representation of Diverse groups:

India is a nation deeply divided into several groups with conflicting interests. All these varied groups are ensured representation in the Parliament through this form of government.

### Prevent deadlock:

Besides Munshi, K. Santhanam, referring to the Presidential system in the U.S.A., too made it clear that the presidential system the executive and legislature could be seen at loggerheads because of their separation with each other and when they are at loggerheads for a period of three or four years till either the legislature is renewed or the president is re-elected, the whole thing will be a deadlock.

### Problems with our parliamentary system

- Unqualified legislators: Our parliamentary system has created a unique breed of legislator, largely unqualified to legislate.
- Those legislators have sought election only in order to wield executive power.
- Wafer-thin Majority: It has produced governments dependent on a fickle legislative majority.
- Fickle majority leads the government to focus more on politics than on policy or performance.
- Current system has distorted the voting preferences of an electorate that knows which individuals it wants to vote for but not necessarily which parties.
- Opportunistic political parties: It has given rise to parties that are shifting alliances of selfish individual interests, not vehicles of coherent sets of ideas.
- It has forced governments to concentrate less on governing than on staying in office, and obliged them to cater to the lowest common denominator of their coalitions.

### Problems with party system in India

- Parliamentary system, devised in Britain is based on traditions which simply do not exist in India.
- The parties in England are clearly defined, each with a coherent set of policies and preferences that distinguish it from the next.
- In India, a party is all-too-often a label of convenience which a politician adopts and discards frequently.
- So, a politician changing a party is not treated as an unusual event in India.
- In the absence of a real party system, the voter chooses not between parties but between individuals.

- The candidates are usually chosen on the basis of their caste, their public image or other personal qualities.
- So, voters vote for a legislature not to legislate but in order to form the executive.

## 4 Problems with choosing executive from Parliament

- It limits executive posts to those who are electable rather than to those who are able.
- Though he can bring some members in through the Rajya Sabha, but it too has been largely the preserve of full-time politicians, so the talent pool has not been significantly widened.
- It puts a premium on defections and horse-trading. The anti-defection Act of 1985 has failed to cure the problem.
- Legislation suffers. Most laws are drafted by the executive in practice by the bureaucracy.
- The ruling party inevitably issues a whip to its members in order to ensure unimpeded passage of a bill.
- The parliamentary system does not permit the existence of a legislature distinct from the executive.
- Accountability of the government to the people, through their elected representatives, is weakened.
- For those parties who do not get into government Parliament or Assembly serves as a theatre for the demonstration of their power to disrupt.

### Case for presidential system

- Stability: A directly elected chief executive at Centre and State would be free from vulnerabilities of coalition support politics, would have the stability of tenure free from a legislative whim.
- Meritocracy: He/she will be able to appoint a cabinet of talents, be able to devote his or her energies to governance, and not just to government.
- The Indian voter will be able to vote directly for the individual he or she wants to be ruled by.
- The president will truly be able to claim to speak for a majority of Indians rather than a majority of MPs.
- It will force political parties to be more democratic and robust. All political parties will have to choose their best candidates as there will be a direct head-to-head contest.
- No Proxy rule: The people will not accept anyone less. There will be no alternate power centres, no remote controls, and no backseat drivers.
- Strong decisions: He will not have to appease unreasonable allies and indulge in compromises all the time. He can raise FDI sectoral caps, increase the price of diesel, and hike train fares without thinking that his job is in danger or that he will be forced to rollback these measures.
- The legislature will be free to do its work. The job of parliament is to pass laws. But opposition law-makers have begun to believe their duty is to bring down the government. Once that power is taken away from them, it will bring them back to their primary task of discussing bills and passing laws that will improve the lot of the people.

## Why Presidential system may not be suitable for India?

- A diverse country like India cannot function without consensus-building. This winner takes it all approach, which is a necessary consequence of the presidential system, is likely to lead to a situation where the views of an individual can ride roughshod over the interests of different segments.
- The other argument, that it is easier to bring talent to governance in a presidential system, is specious. Besides, outside talent can be brought in a parliamentary system too.

On the other hand, bringing outside talent in a presidential system without people being democratically elected would deter people from giving independent advice to the chief executive because they owe their appointment to him/her.

- Those who speak in favour of a presidential system have only the Centre in mind. They have not thought of the logical consequence, which is that we will have to move simultaneously to a gubernatorial form in the States. A switch at the Centre will also require a change in the States.
- The risk of dictatorship : The fear is of an imperious president, immune to parliamentary defeat and impervious to public opinion, ruling the country by fiat.

*Consider the question "Examine the differences between the presidential system and the parliamentary system of government. Do you think that the parliamentary system has served well in the Indian context?"*

### Way ahead

- However, a switchover to the presidential system is not possible under our present constitutional scheme because of the basic structure doctrine propounded by the Supreme Court in 1973 which has been accepted by the political class without reservation, except for an abortive attempt during the Emergency by Indira Gandhi's government to have it overturned.
- The Constituent Assembly had made an informed choice after considering both the British model and the American model and after Dr. B.R. Ambedkar had drawn up a balance sheet of their merits and demerits.
- To alter the informed choice made by the Constituent Assembly would violate the basic structure of the Constitution

### Conclusion

With the needs and challenges of one-sixth of humanity before our leaders, we must have a democracy that delivers progress to our people.

# INTERNATIONAL RELATIONS

FOREIGN POLICY WATCH: INDIA-MIDDLE EAST

## Costs of neglecting new Arabian business

International Relations | GS2: Bilateral, Regional and Global Groupings and agreements involving India

Note4Students | From UPSC perspective, the following things are important :  
Prelims level : Arab Countries

Mains level : Paper 2- India-Arabian countries, balancing relations with Iran

The article contrasts the over-emphasis put on the ties with Iran with the neglect of ties with Arab countries in India's foreign policy. It explores the inherent difficulties in dealing with Iran. And opportunities for India in Arab countries.

### Context

- Iran is accorded high priority in India's foreign policy.
- This stands in stark contrast to the under-appreciation of relationship with Arab countries.

### Reasons for a special relationship with Iran

- Historical connections.
- Civilisational bonds.
- Energy supplies.
- Regional security.
- Geographic and demographic size, the geopolitical location next door.
- Natural resources and the extraordinary talents of its people.

### Importance of Arab countries for India

- Millions of Indian immigrants in the Arab nations.
- Massive hard currency remittances from them, and the density of commercial engagement with the Arab Gulf is important for India.
- The UAE and Saudi Arabia have, in recent years, extended invaluable support in countering terrorism and blocked attempts to condemn India in the Muslim world.

### Let's analyse the issue of railway contract in Iran

- Large countries with major foreign investments and projects win some and lose some.
- Then there is no escaping the political risk associated with foreign projects.
- And politics, both domestic and international, is all-consuming in Iran.
- The sanctions regime imposed by the US has crippled the Iranian economy.
- India is careful not to attract the US sanctions.
- India did gain an exemption from the US sanctions regime for its participation in the Chabahar port project in Iran.
- But they don't apply to some of the partners suggested by Iran in the railway project.
- So, Iran would like India to break the US sanctions regime.
- A prudent India is resisting that temptation.

- It would rather lose the railway contract than get into the raging crossfire between the US and Iran.

### Issue of balancing the relations with Iran and U.S.

- Indias Iran policy cannot be seen as a test of Indias strategic autonomy.
- Some expect Delhi to conduct its relationship with Iran without a reference to either a cost-benefit calculus or Irans troubled relationship with others with whom India has important partnerships.
- No government in Delhi can buy into that proposition.
- Criticism of the government policy is similar to what happened in 2005 over India's stance on Irans covert nuclear programme.
- Delhis vote against Iran in the International Atomic Energy Agency drew criticism.
- But governments stand proved right when Iran concluded a nuclear deal of its own with the US and major powers, a decade later.
- Iran surely can take care of its own interests, and there is little reason why Delhi must back Tehran in every one of its fights with Washington.

### India should focus on Arab countries

- The Arab world has had its doors open for political, economic and technological cooperation with India.

- Three moderate Arab nations Egypt, Saudi Arabia and the UAE are confronting radical forces in the region and are valuable partners for India in countering forces of destabilisation.
- There is real Chinese economic action in the Arab world as the region embraces Chinas Belt and Road Initiative.
- India is no minor economic force in the Arab world, having had a much longer engagement with the region than China.
- Delhi must up its own commercial game in the Arab world, and one of the new possibilities for India lies in the domain of new technologies.
- There is emerging sentiment among the Gulf Arabs to reduce the over-dependence on oil, promote alternative energy sources, invest in higher education, and develop technology hubs.

*Consider the question "India's relations with Iran has always been driven by the geopolitical contexts. This poses an inherent challenge for both countries. In light of this examine the importance of Iran for India and challenges India's foreign policy faces in dealing with Iran."*

### Conclusion

India must focus on elevating Indias economic partnership with the Arab world to the next level. For India, the costs of neglecting the new possibilities for wide-ranging Arabian business are far higher than a lost railway contract in Iran.

FOREIGN POLICY WATCH: INDIA-CHINA

## Exploring options to tackle China

International Relations | GS2: India & Its Neighborhood - Relations

Note4Students | From UPSC perspective, the following things are important :  
Prelims level : Not much.

Mains level : Paper 2- Options in dealing with China

There are several options which India could explore in dealing with China with less cost but significant effectiveness. Diplomacy is one of them. What are the other options? Read the article to know...

### Context

- China's aggression and Galwan valley incident dismantles the Border Agreements of 1993, 1996, 2005 and 2013.
- Understanding China's objectives become critical in this situation.

### Analysing China's objectives

- Humbling India in the eyes of Asia and the world was all important for China.
- Despite China's territorial aggression, it would be a mistake to think that China is preparing for a conflict over territory.
- China is well aware that it cannot be certain whether it will emerge a victor from an all-out conflict with India.
- China cannot afford to jeopardise its future for the present.

- China has been intent on transforming the Asian region in its own image, and, simultaneously, seeking to become a continental and a maritime power.

### What are the options to deal with China

- India may well find non-military tools not only more cost-effective but also less risky.
- Exploiting the current widespread opposition to China, India must try to create international opinion in its support regarding border violations.
- Cultivation of foreign leaders with a view to draw their specific attention to Chinas aggressive policies and designs is the second option.
- Indias involvement with the Non-Aligned Movement (NAM) should prove invaluable in this respect.
- India must also overhaul its messaging capacity.
- It should make greater use of technology to send across its message and ideas in its vicinity and across the globe, highlighting its peaceful intentions in stark contrast to Chinas aggressive policies and tactics.
- India must pay particular attention to relations with countries in its neighbourhood, such as Nepal and Bangladesh, and allies such as Iran and Vietnam.
- Relationship with these countries seems to have frayed at the edges, with India being more intent on strengthening relations with the West.

- Smaller countries of Asia, which constantly face China's aggressive interference in their internal affairs, have not received much support from India, and this needs India's attention.
- India's true strength is its unity in diversity. A truly united and resilient India is the best antidote to China's attempts to humble India.
- China has never been able to properly understand, the strength India seems to derive from its spiritual, religious and cultural attributes, which are a part of its civilisational heritage.
- India would do well to take pole position in propagating Himalayan Buddhism which China has been seeking to subvert to achieve its ends.

*Consider the question "To counter the challenges manifested by China through recent events India needs to explore along with other options the subtler tools of power available to it. Examine the other tools available with India."*

## Conclusion

Military no doubt project the country's power but there are other options with less cost and significant benefits. India should focus on these options as well while dealing with China.

FOREIGN POLICY WATCH: INDIA-SOUTH KOREA

# Deepening ties with South Korea

International Relations | GS2: Bilateral, Regional and Global Groupings and agreements involving India

The article highlights the need for India and South Korea to focus on the cultural gap. Indians and South Koreans have not moved closer to each other as people. And it resulted in stagnancy in relations in other areas as well.

## Areas of Cooperation

### Background

- Engagement During Korean War: India played a crucial and decisive role in Korean affairs soon after the latter's independence in 1945.
- India's first foreign secretary, K P S Menon, served as Chairman of the nine-member United Nations (UN) Commission that was set up in 1947 to oversee elections in Korea.
- During the Korean War (1950-53), the warring sides accepted a UN resolution sponsored by India calling for a ceasefire; one was declared on 27 July 1953.
- Start of Bilateral Relations: The relationship started only in 1962 that the two countries established consular relations. It was upgraded to Ambassador-level in 1973.
- This development caused a little impact on trade and commercial relations, let alone political and people-to-people ties.
- Even then Prime Minister P.V. Narasimha Rao much talked about Look East Policy (LEP) in the 1990s failed to make any visible positive change in India-South Korea relations.
- In February 2006, former Indian President APJ Abdul Kalam visited RoK and his visit led to the launch of a Joint Task Force to conclude a bilateral Comprehensive Economic Partnership Agreement (CEPA), which was operationalized on January 1, 2010.
- During Prime Minister Narendra Modi's visit to South Korea in 2015, the bilateral relationship was upgraded to special strategic partnership.
- In a joint statement, PM Modi and President Park Geun-hye agreed to establish a 2+2 consultation mechanism at Secretary/Vice Minister of Foreign Office and Defence Ministry.

### 1. Economic and commercial relations

Trade and economic relations have started to gather momentum again following the implementation of CEPA in 2010 and the bilateral trade in 2011 crossed USD 20.5 billion registering a 70% growth over a two-year period.

India and South Korea launched an initiative Korea Plus, as proposed by Prime Minister Modi in June 2016 in India to promote and facilitate Korean Investments in India.

Major Korean conglomerates such as Samsung, Hyundai Motors and LG have made significant investments into India, estimated at over \$4.43 billion (as of March 2017).

### 2. Defence Cooperation:

India has signed two agreements, one to extend logistical support to each other's navies, and a second one to deepen defence educational exchanges.

The agreement on naval logistics sharing is particularly a significant one, given that India has such arrangements so far only with the United States and France.

### 3. Cultural Relations

To enhance cultural exchanges between India and Korea, an Indian Cultural Centre (ICC) was established in Seoul in April 2011. In order to boost people-to-people relations and travel between the two countries, India extended visa-on-arrival (VoA) facility for Korean tourists from 15 Apr 2014.

### 4. Indian Community:

The total number of Indian nationals living in the ROK is estimated to be around 11,000, which includes 120 PIOs.

Around 1,000 Indian scholars are pursuing postgraduate and Ph. D programmes, mostly in pure sciences in Korea.

During the past few years, many professionals mainly in the areas of IT, shipping and automobile have immigrated to ROK. They are working mostly with Samsung, LG, Hyundai TATA Daewoo and TCS. There is also a significant number of students and academicians in the universities.

## Importance of India-South Korea relationship

### 1. New Southern policy vs Look east policy

- South Korea had enunciated his New Southern Policy in 2017 to further strengthen bilateral relations with countries in South and Southeast Asia in general and India in particular.
- Moons New Southern Policy aims to strengthen the economic-cooperation and build a prosperous and people-centric community of peace while Indias Act East Policy, focuses on promoting deeper economic engagement, reinvigorating cultural and civilizational relations, and developing new strategic partnerships with countries in the Indo-Pacific region through continuous engagement at bilateral as well as at multilateral levels.

### 2. Shared Values of Democracy

- One of the most unexplored areas of cooperation to strengthen the relationship between India and South Korea is democracy.
- Further, in Asia, India and South Korea, as democracies, share common values and have been seen above convergent interests in the region.

### 3. Complementarities at Various levels

- South Koreas technological advancement and manufacturing capabilities can be helpful in Indias economic growth and human resource development.
- Seouls successful development story of the last few decades can complement Modis vision of making a New India by 2022.

### 4. US-China Trade war

The ongoing trade war between U.S. and China has also started playing into India-South Korea bilateral ties as South Korean companies are now finding it more difficult to sell their products in the U.S., whenever they are produced in their Chinese branches. Growing trade tensions have forced South Korean companies to contemplate moving their production facilities to locations outside China.

India is emerging as a prime beneficiary here, not least because of the considerable size of the Indian domestic market, its cheap labour costs and a stable legal system.

#### 5. Investment

- The Indian governments plan to build 100 smart cities and construct industrial corridors to link the major cities is an important area where South Korean companies can participate in infrastructural projects that will be mutually beneficial for both nations.

### Challenges

The trade target of \$50 billion by 2030 is most likely to be missed due to lack of adequate efforts.

Indias total exports to South Korea stands at \$4.95 billion which is just 1.03percent of South Koreas total imports.

Indias imports from South Korea are \$15.1 billion, 3.3percent of Indias total imports.

The Comprehensive Economic Partnership Agreement, originally the core mechanism for economic ties, requires immediate upgrading.

An early harvest agreed to in 2018, under which India agreed to reduce tariff on 11 commodities and South Korea on 17, failed to see completion.

More than eight years into its existence, the Indian Chamber of Commerce in Korea (ICCK), is struggling to find its due space in promoting economic and business ties and spends most of its time organising social and cultural events.

South Korean relations with China exhibits its reluctance towards India.

- Defence partnership appears to have receded from great all-round promise to the mere sale and purchase of weapon systems.

### Reason for stagnation in relationship

- Indians and South Koreans are failing to touch a mutually meaningful chord of empathy and move closer.
- This is at least in part due to cultural prejudices on both sides.
- Whatever bilateral progress has been made, has not lent sufficient momentum that people start building bridges in other areas.
- Within South Korea, the integration of Indians in the local population is far from complete.

### Way forward

- Mutual respect regarding cultural values is the key to building a robust partnership between the two countries.
- The means to achieving that respect is often filling the information gap that creates a chasm between two strong cultures.
- The establishment of the Indian Culture Centre (ICC) in Seoul 10 years ago was a step in the right direction.
- As the balance of power in the region continues to shift fast, India and South Korea may need each like never before, to protect their ways of life.

*Consider the question "India and South Korea have many avenues to deepen their ties for the benefit of each other. Examine the areas in which both countries can cooperate and factors that are responsible for stagnancy in the relationship between the two countries."*

### Conclusion

India-South Korea ties have the potential to reach a new height and form partnership and cooperation in various area and help each other. But both countries will be able to help each other only if they can fill the cultural gaps.

# SECURITY ISSUES

CYBER SECURITY - CERTS, POLICY, ETC

## BlackRock Android Malware

Security Issues | GS3: Social Media Networks & Internal Security

Note4Students | From UPSC perspective, the following things are important:  
Prelims level : Malwares  
Mains level : Data privacy issues

Various security firms have alerted about new malware, called BlackRock.

### Try this question from CSP 2018:

Q.The terms WannaCry, Petya, Eternal Blue sometimes mentioned news recently are related to  
(a) Exoplanets (b) Cryptocurrency (c) Cyberattacks (d) Mini satellites

#### BlackRock

- BlackRock isn't exactly a new malware. In fact, it is based on the leaked source code of the Xeres malware, itself derived from a malware called LokiBot.

- The only big difference between BlackRock and other Android banking trojans is that it can target more apps than previous malwares.

#### How does it work?

- BlackRock works like most Android malware. Once installed on a phone, it monitors the targeted app.
- When the user enters the login and/or credit card details, the malware sends the information to a server.
- BlackRock uses the phone's Accessibility feature and then uses an Android DPC (device policy controller) to provide access to other permissions.
- It can be used to send and steal SMS messages, hide notifications, keylogging, AV detection, and much more.

#### Threats posed

- The new malware can steal information like passwords and credit card information from about 377 smartphone applications, including Amazon, Facebook, and Gmail.
- It is so powerful that it makes antivirus applications useless.

# ENVIRO & BIODIVERSITY

[PIB] DDT AND ITS IMPACT ON ENVIRONMENT

## [pib] DDT and its impact on environment

Enviro & Biodiversity | GS3: Conservation, Environmental Pollution & Degradation, Eia

India has supplied 20.60 MT of DDT to South Africa for its Malaria control program.

Note4Students | From UPSC perspective, the following things are important:  
Prelims level : DDT  
Mains level : Paper 3-Pollution and harm to ecology

## Try this question from CSP 2014:

With reference to Global Environment Facility, which of the following statements is/are correct?

- (a) It serves as financial mechanism for Convention on Biological Diversity and United Nations Framework Convention on Climate Change
- (b) It undertakes scientific research on environmental issues at global level
- (c) It is an agency under OECD to facilitate the transfer of technology and funds to underdeveloped countries with specific aim to protect their environment.
- (d) Both (a) and (b)

## What is DDT?

- Dichloro-diphenyl-trichloroethane commonly known as DDT is a colorless, tasteless, and almost odorless crystalline chemical compound.
- It was developed as the first of the modern synthetic insecticides in the 1940s.
- It was initially used with great effect to combat malaria, typhus, and other insect-borne human diseases among both military and civilian populations.

## Why is it controversial?

- DDT is a persistent organic pollutant that is readily adsorbed to soils and sediments, which can act both as sinks and as long-term sources of exposure affecting organisms.
- Routes of loss and degradation include runoff, volatilization, photolysis and aerobic and anaerobic biodegradation.
- Due to hydrophobic properties, in aquatic ecosystems DDT is absorbed by aquatic organisms and thus bio-accumulates in the food web.

## Threats of DDT

- The bioaccumulation of DDT has caused eggshell thinning and population declines in multiple North American and European bird of prey species.
- DDT is an endocrine disruptor. It is considered likely to be a human carcinogen.

## In use despite ban

- A worldwide ban on agricultural use of DDT was formalized under the Stockholm Convention on Persistent Organic Pollutants.
- But its limited and still-controversial use in disease vector control continues, because of its effectiveness in reducing malarial infections, balanced by environmental and other health concerns.

## Back2Basics: Stockholm Convention on POPs

- Stockholm Convention is an international environmental treaty, signed in 2001 and effective from May 2004 that aims to eliminate or restrict the production and use of persistent organic pollutants (POPs).
- In 1995, the United Nations Environment Programme (UNEP) called for global action to be taken on POPs.
- POPs are defined by the UNEP as chemical substances that persist in the environment, bio-accumulate through the food web, and pose a risk of causing adverse effects to human health and the environment.

## Bioaccumulation and Biomagnification

- Bioaccumulation and biomagnification are two different processes that often occur in tandem with one another.
- Bioaccumulation is the process by which toxins enter the food web by building up in individual organisms.
- Biomagnification is the process by which toxins are passed from one trophic level to the next (and thereby increase in concentration) within a food web.

## URBAN FLOODS

# National Flood Commission

Enviro & Biodiversity | GS3: Conservation, Environmental Pollution & Degradation, Eia

Note4Students | From UPSC perspective, the following things are important:  
Prelims level : NFC  
Mains level : Paper 3- Urban floods and related issues

At least 43 years after Indias first and last commission on floods was constituted, there is no national-level flood control authority in the country so far.

Try this question for mains:

Q. What are the various causes of urban floods in India?

## National Flood Commission

- Rashtriya Barh Ayog or the National Flood Commission (NFC) was set up by the Ministry of Agriculture and Irrigation in 1976.
- It aimed to study Indias flood-control measures after the projects launched under the National Flood Control Programme of 1954 failed to achieve much success.

## NFCs recommendation

- In 1980, the NFC made 207 recommendations and four broad observations:
- First, it said there was no increase in rainfall in India and, thus, the increase in floods was due to anthropogenic factors such as deforestation, drainage congestion and badly planned development works.

- Second, it questioned the effectiveness of the methods adopted to control floods, such as embankments and reservoirs, and suggested that the construction of these structures be halted until their efficacy was assessed.
- Third, it said there have to be consolidated efforts among the states and the Centre to take up research and policy initiatives to control floods.
- Fourth, it recommended a dynamic strategy to cope with the changing nature of floods. An analysis of the report suggested that the problem began with the methods of estimating flood-prone areas of the country.

### Why revive NFC?

- An accurate estimate is crucial for framing flood management programmes.
- The NFC estimated that the total area vulnerable to floods in 1980 was around 40 million hectares.
- There is another problem. The very definition of the flood-prone area does not reflect the effectiveness of the flood management works undertaken.

[PIB] RAISE INITIATIVE

## [pib] RAISE Initiative

Enviro & Biodiversity | GS3: Infrastructure: Energy, Ports, Roads, Airports, Railways Etc.

Note4Students | From UPSC perspective, the following things are important :  
Prelims level : RAISE initiative

Mains level : Paper 3-Energy efficiency and safety

The Ministry of Power has launched Retrofit of Air-conditioning to improve Indoor Air Quality for Safety and Efficiency (RAISE) - a joint initiative of EESL and USAID.

Possible prelims question:

*Q. The MAITREE programme recently seen in news is related to:  
Trade/Energy Efficiency/Climate Change/ Strategic Relations*

### RAISE Initiative

- It aims to ensure cleaner and greener office spaces in the country.
- This is a part of the larger initiative developed for healthy and energy-efficient buildings, in partnership with US Agency for International Development (USAID) MAITREE programme.

### Why RAISE?

- Poor air quality has been a concern in India for quite some time and has become more important in light of COVID pandemic.

- As people return to their offices and public spaces, maintaining good indoor air quality is essential for occupant comfort, well-being, productivity and overall public health, the statement noted.

### About MAITREE programme

- The Market Integration and Transformation Program for Energy Efficiency (MAITREE) is a part of the US-India bilateral Partnership between the Ministry of Power and USAID.
- It is aimed at accelerating the adoption of cost-effective energy efficiency as a standard practice within buildings and specifically focuses on cooling.

### Back2Basics: EESL

- Energy Efficiency Services Limited (EESL), under the administration of Ministry of Power, is working towards mainstreaming energy efficiency.
- It is implementing the world's largest energy efficiency portfolio in the country.
- EESL aims to create market access for efficient and future-ready transformative solutions that create a win-win situation for every stakeholder.

### About USAID:

- USAID is the world's premier international development agency and a catalytic actor driving development results.

GLOBAL GEOLOGICAL AND CLIMATIC EVENTS

## Lonar Lake turned pink due to 'Haloarchaea' microbes

Enviro & Biodiversity | GS3: Awareness In The Fields Of It, Space, Computers, Robotics, Nano-Technology, Bio-Technology, Pharma Sector & Health Science

Note4Students | From UPSC perspective, the following things are important :  
Prelims level : Lonar Crater Lake, Pleistocene epoch  
Mains level : Not Much

The colour of Lonar lake water in Maharashtra's Buldhana district turned pink due to a large presence of the salt-loving Haloarchaea microbes, a probe carried out by a Pune-based institute has concluded.

Make a note of all saltwater lakes in India. Few of them are Pulicat, Pangong Tso, Chilika, and Sambhar Lakes etc.

### Haloarchaea microbes

- Haloarchaea or halophilic archaea is a bacteria culture which produces pink pigment and is found in water saturated with salt.
- The increased salinity and pH facilitated the growth of halophilic microbes, mainly Haloarchaea.
- Basically, it is the biomass of these microbes and because of that, the surface of the water turned red or pink and as soon as the biomass subsided, the colour disappeared.

- The scientist said the colour of the lake is now returning to original as the rainy season has kicked in, allowing dilution of the water.
- Initially, it was thought for the red-pigmented Dunaliella algae due to which the water might have turned pink.
- Because of that, the salinity and pH/alkalinity levels have also come down and green algae have started growing in the water body.

### About Lonar Lake

- Lonar Lake, also known as Lonar crater, is a notified National Geo-heritage Monument, saline (pH of 10.5), Soda Lake, located at Lonar in Buldhana district, Maharashtra.
- It was created by an asteroid collision with earth impact during the Pleistocene Epoch.
- It is one of the four known, hyper-velocity, impact craters in basaltic rock anywhere on Earth.
- It sits inside the Deccan Plateau massive plain of volcanic basalt rock created by eruptions some 65 million years ago.
- Its location in this basalt field suggested to some geologists that it was a volcanic crater.

## WILDLIFE CONSERVATION EFFORTS

# Bats and their Ecological Significance

Enviro & Biodiversity | GS3: Conservation, Environmental Pollution & Degradation, Eia

Note4Students | From UPSC perspective, the following things are important:  
Prelims level : Bats and their natural role  
Mains level : Illicit wildlife trade and its prevention

The COVID pandemic has magnified our fear of bats, but their conservation is crucial to prevent such events from arising again.

### Try this PYQ from CSP 2014:

Q.Consider the following:

1. *Bats*
2. *Bears*
3. *Rodents*

*The phenomenon of hibernation can be observed in which of the above kinds of animals? (a) 1 and 2 only (b) 2 only (c) 1, 2 and 3 (d) Hibernation cannot be observed in any of the above*

### Bats

- Bats are the largest mammalian group after rodents, with over 1,300 species making up a quarter of all mammals.
- They occur on all continents except Antarctica and are particularly diverse in South Asia, with 114 species of insect-eating bats and 14 fruit bats, also known as flying foxes, occurring in India.
- They roost in large colonies on trees, tree hollows, caves, rock crevices and abandoned manmade structures.

- They play a unique role in maintaining ecosystem structure, making a singular contribution to our food production, economy and well-being.
- They are the only mammals capable of true flight and have a unique sonar-based echolocation mechanism to capture prey at night.

### Their significance

#### 1) Seed dispersal

- About 29 per cent of all bats depend upon plants for food.
- The diet of fruit-eating bats consists largely of flowers and fruits such as mangoes, bananas, guavas, custard apples, figs, tamarind and many species of forest trees.
- Therefore, bats play a vital role in seed dispersal and forest regeneration. Studies have shown that seedlings raised from bat dispersed seeds show higher germination and vigorous growth.

#### 2) Pollination

- Studies have found that bats play a vital role in pollination, mainly of large-flowered plants, and in crop protection.
- Fruit bats (Megachiroptera) being large, require big flowers with copious amounts of nectar.
- Bats are major pollinators for many species of mangroves which are important for coastal ecosystems and local livelihoods.

#### 3) Production boost

- Insects are a major problem for agriculture, destroying up to 26 per cent of the annual production of crops worldwide every year, roughly amounting to \$470 billion.

- Insectivorous bats, which make up 70 per cent of all bat species, are voracious predators of nocturnal insects and crop pests.
- Some large insectivorous bats are also reported to feed on small rodents. Thus they contribute directly to enhancing the crop productivity with tremendous economic impact.

#### 4) Soil fertility

- Bats contribute significantly to soil fertility and nutrient distribution due to their large numbers, high mobility and varied habitats for roosting and foraging.
- Bat droppings provide organic input to soil and facilitate nutrient transfer, contributing to soil fertility and agricultural productivity. The practice is harmless vis-a-vis human health.

#### 5) Health benefits

- Several species of bats, in fact, contribute to human health by reducing populations of mosquitoes and other insect vectors that spread malaria, dengue, chikungunya and other diseases.
- It is reported that a small bat may feed on almost 5,000 mosquitoes each and every feeding night far more than other measures adopted to eliminate them.

#### Their conservation

- According to the IUCN, about 5 per cent of bats are categorised as endangered and another 11 per cent are data deficient.
- Further, some species of fruit bats are categorised under Schedule 5 of the Wildlife (Protection) Act, 1973, along with other vermin species like rats, making it difficult to legally conserve them.

#### Conclusion

- The pandemic has demonstrated that conservation of biodiversity and natural habitats is absolutely essential to prevent such events from arising again.
- Understanding the role played by bats helps us appreciate how their absence can greatly affect all facets of our lives.
- Viruses don't jump directly from bats or other animals to humans.
- Rather, illicit trade in wildlife, high levels of hunting for the consumption of wild meat, and destruction of natural habitats are responsible for this.

#### MANGROVES & ITS IMPORTANCE

## Mangroves & Its Importance

Enviro & Biodiversity | GS3: Conservation, Environmental Pollution & Degradation, Eia

Note4Students | From UPSC perspective, the following things are important :  
Prelims level : Prelims level : Distribution of Mangroves in India  
Mains level : Read the attached story

Cyclone Amphan caused large scale damages to the state of West Bengal. One of the major loss incurred by the state was the damages to the Sundarban forests. The damage to Sundarbans is not merely an ecological and economic loss. These forests play a key role in protecting the region from the impacts of frequent cyclones. Also, a PIL has challenged the diversion of reserve mangrove forests in Maharashtra for construction activities. In this light, the importance of mangroves in India is to be examined.

#### What are mangroves?

- Mangroves or tidal forests are a type of tropical wetland rainforest ecosystem noted for their salt-tolerant vegetation (halophytes). It can be thought of as an interface between terrestrial forests and marine ecosystem.
- Mangrove forests occupy 2,00,000 square kilometres of area across 30 tropical countries .
- They are found in tropical and sub-tropical tidal areas like marine coastlines and estuaries .
- These forests consist of vegetation that are small, shrubby and highly specialized to thrive in hostile conditions.
- It consists of diverse habitats like forests, mudflats, estuaries, rivers, coral reefs, etc.
- There are over 100 species of mangrove plants. These are home to around 174 species of marine mega fauna . Species like oysters, shrimps, sponges, barnacles, etc. are found here.

- These plants are capable of surviving in saline conditions with tidal water flows and muddy soil that is deficient in oxygen.
- They have upwards growing roots that enable them to absorb oxygen (something that is scarce in the glutinous muds). These are called pneumatophores .
- They have a specialised salt filtration system that can filter out the excess salt from the waters.

#### Where are mangrove ecosystem in India?

- India has about 4,921 square kilometres of mangrove forests. This is over 3% of the world total.
- The largest mangrove forest in India is the Sundarbans (meaning beautiful forest) in the Gangetic Delta . This mangrove stretches across India and Bangladesh .
- The 2nd largest mangrove ecosystem in India is the Bhitarkanika located on the Odisha coast.
- The Godavari- Krishna mangrove forests are located on the east coast of Andhra Pradesh .
- The Pichavaram mangroves are in Tamil Nadu .
- Mangrove forests are also found near Mumbai city on the western coast.
- They are also found on the Andaman and Nicobar islands . Eg: the Baratang Island mangroves .

#### Why are they important?

- Mangroves are structurally complex with diversified habitat . This means that they create unique environments that serve as niches for a large variety of organisms.
- These forests serve as breeding and feeding grounds and also as nurseries for a variety of commercially important marine organisms like fishes and crustaceans.

- NASA has termed them the best carbon scrubbers because of their role as a significant carbon sink. They store more carbon dioxide than most of the other forest types.
- They filter out heavy metals from the mud and deposit them as rich sediments.
- The extensive mangrove root system is capable of weakening the impact of the sea on the land.
- The mangroves on the eastern coast helped mitigate the impact of the 2004 Boxing Day tsunami. These stretches were said to have behaved like cars bumper (impact absorber) and crumple zones absorbing massive amounts of energy from the waves.
- The Sundarbans serve as a floodbarrier in West Bengal. They protect the city of Kolkata from the frequent cyclones the most recent of which was the Cyclone Amphan.
- They have important ecological functions like recycling nutrients, etc.
- Sundarbans is a biosphere reserve and has been declared a World Heritage Site by UNESCO. The Sundarbans is the largest delta declared as a UNESCO heritage site.
- It houses the largest number of Royal Bengal tigers in the world. It also houses over 250 species of birds, 120 species of fishes, reptiles like the salt water crocodiles, etc.
- Bhitarkanika is an important Ramsar Wetland site. More than 220 species of birds have been recorded from this area.
- It is also the largest known nesting site for the Olive Ridley sea turtles.

## **What happened to the Sundarbans during the Cyclone Amphan?**

- When Cyclone Amphan struck West Bengal in May, its effects were largely mitigated by the Sundarbans flanking its coasts along the Bay of Bengal.
- However, the cyclone damaged over 28% of the Sundarbans. About 1,200 square kilometres of these forests suffered damages.
- The mangrove trees leaves turned yellow and red especially in the Avicennia species. This phenomenon was more prominent among the non-mangrove trees further inland. This has been attributed to root damage and high salinity. Mangroves require a mix of freshwater and saline water to grow. Very high salinity can damage even these trees.
- The loss to mangrove wildlife proved difficult to determine. They tend to suffer the most during such cyclones.
- The impact of the damage was also felt by the communities that depend on these mangroves. Also, the saline water ingress affected agricultural activity in the adjoining area.
- In the aftermath of the disaster, the West Bengal government announced plans to plant 50 million mangrove trees to compensate for the loss due to the cyclone.
- However, this plan is being criticised as it doesn't take the space availability into consideration. Experts say that a single hectare can hold 5,000 mangrove trees at the most. In that case, the proposed 50 million trees would require a 100 square kilometre area.
- This is difficult given that many similar mangrove replantation projects have been stalled due to space scarcity.
- However, the government is in the process of identifying lands for this project and plantations are to start next October.

## **What are the threats to the mangroves?**

- Anthropogenic activities are a major threat to the mangroves.

- Urbanisation, industrialisation and the accompanying discharge of industrial effluents, domestic sewage and pesticides residues from agricultural lands threaten these fragile ecosystems.
- Saltpan and aquaculture causes damage to the mangroves. Shrimp farming alone destroyed 35,000 hectares of mangroves.
- Fragmentation of mangrove forests is another consequence of unplanned human expansions. Fragmentation affects the dispersal and movement of species.
- Some species like Bruguiera cylindrica and Sonneratia acida are at the brink of extinction.
- 40% of mangroves on the west coast have been converted into farmlands and other settlements in just 3 decades.
- The mangroves on the Maharashtra coast stretched over 200 km in the 1970s. By 2001, the stretch reduced to 118 km.
- The mangroves in Maharashtra are facing further destruction as the upcoming bullet train project requires the cutting down of 13.36 ha of mangroves in the Thane creek. Nearly 30,000 trees are to be cut down for the project.
- Rising sea levels is another challenge to these mangroves especially on the Bay of Bengal coast.
- Climate change is increasing the frequency of extreme weather events like the Amphan cyclone. The mangroves are one of the most vulnerable ecosystems to these natural calamities.

## **What are the efforts taken to protect these mangroves?**

- The Sundarbans is the first mangrove forest in the world to be put under scientific management. The plan was implemented as early as in 1892.
- In 1976, the National Mangrove Committee was set up under the Environment Ministry.
- In 1979 it recommended focus on areas like mapping of mangroves using remote sensing, land surveys, etc., to determine degradation rate, assessing sites for establishing reserve forests, conservation program, afforestation, R&D etc.
- Several legislations like Environment (Protection) Act, Indian Forest Act, Wildlife Protection Act, Forest Conservation Act, etc. are sources of protection (though mangroves are not specifically mentioned in all of these).
- In 2013 the Biotechnology Department started a bio-restoration program in pilot mode in the Sundarbans. It involves stabilisation of degraded mangrove stretches with native grasses (salt-tolerant varieties).
- An on-site nursery is also set up. These nurseries grow a variety of mangrove species - native, associated, threatened, endangered, etc. 22 species were raised in these nurseries to maintain diversity. Transplantation was done in 2014.
- The Maharashtra government had announced that 5 times the number of trees cut down for the bullet train project are to be planted as part of restoration efforts.
- In 2005, the Mumbai High Court had classified mangroves as forests.
- In 2018, the High Court called the destruction of mangroves an offence to the fundamental rights of the citizens under article 21 of the Constitution.
- Since then, the government has been undertaking efforts to conserve the mangroves.
- In 2016, the Maharashtra government declared over 15,000 hectares of mangroves as reserve forest. Construction within 50 m of these mangroves is illegal.
- In 2018, India along with 7 other countries of the Bay of Bengal region came together to protect the mangroves under the BOBLME (Bay of Bengal Large Marine Ecosystem) project.
- The UN Food and Agriculture Organisation leads this project. The GEF (Global Environment Facility) approved a grant of 15 million USD for this project.

- According to the 2019 State of Indian Forest Cover Report , the mangrove forest cover in Maharashtra has increased by 72% in the last 6 years . This is an increase of 134 square kilometres .

## Way forward

- Systematic and periodic environmental monitoring of existing mangroves. The various faunal species dependent on these forests must also be documented.
- Use of bio-restoration to revive degraded stretches of mangroves. These techniques help maintain the original biodiversity . Ecological restoration revives the mangroves at a faster rate than natural regeneration.
- Instead of monoculture plantation of mangrove species, restoration efforts should involve sufficient species diversity . This will raise forests that are more resilient to the impacts of climate change.
- A major need is the enforcement of legislative mandate .
- Private sector establishments near the mangroves can be incentivised to take up conservation activities.

- Community participation for conservation and management. The communities dependent on these forests can be supported to take up alternative economic activities to increase sustainable use of these mangroves. At the same time, community level conservation of the mangroves should be incentivized .
- Cultural advantages can be leveraged in mangrove conservation. Eg: Bon Bibi is a forest goddess worshipped by people of different faiths(Hindus & Muslims) in the Sundarbans. The Bon Bibi faith checks excessive acquisition and greed in Sundarbans- people are to enter the forests only when absolutely necessary (eg: livelihood), people are not to carry weapons into the forests, smoking in the forest is seen as a desecration, etc.

## Conclusion

A range of forest types across the world are facing threats from anthropogenic activities. The damages to the Sundarban forests is only the latest example of climate change driven destruction of forests and other ecosystems across the world- like the recent Amazon forest fires and the Australian bushfires. Such events are only to increase in frequency in the future. It is high time to conserve what remains and to restore what was lost.

## WETLAND CONSERVATION

# What is Khazan Farming System?

Enviro & Biodiversity | GS3: Conservation, Environmental Pollution & Degradation, Eia

Note4Students | From UPSC perspective, the following things are important :  
Prelims level : Khazan farming, Salim Ali Bird Sanctuary  
Mains level : Integrated Farming System, Khazan etc.

The Salim Ali Bird Sanctuary in low-lying floodplains of Goa is characterized by an estuarine agricultural system called Khazan farming.

### Try this question from our AWE initiative:

<https://www.civilsdaily.com/mains/how-far-is-the-integrated-farming-system-ifs-helpful-in-sustaining-agricultural-production-10-marks/>

### Khazan Farming

- The low-lying floodplains of Goa host an estuarine agricultural system called Khazan farming.
- This system is a carefully designed topo-hydro-engineered agro-aquacultural ecosystem mainly based on the regulation of salinity and tides.

### How does it work?

- Centuries ago, people in this region reclaimed low-lying brackish coastal floodplains and mangrove forests.
- They constructed bunds using locally available material to prevent the ingress of saltwater, which killed the halophilic mangroves.
- To control the flow of tidal waters, they built openings in bunds fitted with one-way gates.

- These channels would fill in with the oncoming tide and bring with them fish, crab and shrimp, and the gates would automatically shut when the water level was equal on both sides.
- This prevented the water from overflowing into the fields used to grow paddy and which has a low tolerance to salt.
- When the tide receded, these gates would open outwards automatically, allowing the water to drain out.
- During this time, a bag net was set at the gate to catch fish that had entered in earlier.

### Benefits of Khazan

- Every bit of space was precious and used efficiently the bunds were used to grow a variety of vegetables.
- The Khazan system allowed for the farmer and the fisher to harmoniously coexist and was the key to sustaining what is considered Goas staple fish, curry and rice.

### Why is it neglected these days?

- Today, for various reasons, but primarily due to post-independence agrarian reforms of 1961, these lands largely lie fallow and are in a state of decay.
- Lack of cultivation and maintenance of the bunds and sluice gates is leading to their breaching and the natural reclamation of these fallow lands by mangroves.
- Moreover, mangroves are protected by law and it is illegal to cut them.
- Areas that have these trees growing on them also come under the purview of the coastal regulation zone (CRZ); according to the 2011 notification, the mangrove areas are classified as CRZ I and cannot be developed upon.

## Back2Basics: Salim Ali Bird Sanctuary

- The Salim Ali Bird Sanctuary is Goas smallest protected area it comprises barely two square kilometres of lush mangrove forests.

- The sanctuary is located on Choro, one of Goas estuarine islands in the Mandovi river approximately five kilometres from capital Panaji.
- The sanctuary and its surrounds are home to marsh crocodiles, smooth-coated otter, the unique glossy-marsh snake that feeds on crabs, mud lobsters, sap-sucking sea slugs, among others.

# SCIENCE TECH ART CULTURE

INTERNATIONAL SPACE AGENCIES - MISSIONS AND DISCOVERIES

## [pib] Asteroid 2020 ND

Science Tech Art Culture | GS3: Awareness In The Fields Of It, Space, Computers, Robotics, Nano-Technology, Bio-Technology, Pharma Sector & Health Science

NASA has issued a warning that a huge Asteroid 2020 ND will move past Earth on July 24.

### Try this question from CSP 2014:

Q.What is a coma, in the content of astronomy?

- (a) Bright half of material on the comet
- (b) Long tail of dust
- (c) Two asteroids orbiting each other
- (d) Two planets orbiting each other

### What are Asteroids?

- Asteroids are small, rocky objects that orbit the Sun. They are leftover from the formation of our solar system.
- Although asteroids orbit the Sun like planets, they are much smaller than planets.
- There are lots of asteroids in our solar system. Most of them live in the main asteroid belt region between the orbits of Mars and Jupiter.
- Some asteroids go in front of and behind Jupiter. They are called Trojans.
- Asteroids that come close to Earth are called Near-Earth Objects, NEOs for short. NASA keeps a close watch on these asteroids.

### Asteroid 2020 ND

- The 2020 ND is about 170 metres-long.
- It will be as close as 0.034 astronomical units (5,086,328 kilometres) to our planet and is travelling at a speed of 48,000 kilometres per hour.
- Its distance from Earth has placed it in the Potentially Hazardous Asteroids (PHAs) category.

### How are PHAs defined?

- PHAs are currently defined based on parameters that measure the asteroids potential to make threatening close approaches to the Earth.
- NASA classifies objects like these as near-Earth objects (NEOs) as they get nudged by other planets gravitational attraction resulting in their proximity to our solar system.
- It is not necessary that asteroids classified as PHAs will impact the Earth. It only means there is a possibility for such a threat.

### Can they be deflected?

- Over the years, scientists have suggested different ways to ward off such threats, such as blowing up the asteroid before it reaches Earth or deflecting it off its Earth-bound course by hitting it with a spacecraft.
- The most drastic measure undertaken so far is the Asteroid Impact and Deflection Assessment (AIDA), which includes NASAs Double Asteroid Redirection Test (DART) mission and the ESAs Hera.
- Both missions target is Didymos, a binary near-Earth asteroid, one of whose bodies is of the size that could pose the most likely significant threat to Earth.
- In 2018, NASA announced that it had started the construction of DART, which is scheduled to launch in 2021 with an aim to slam into the smaller asteroid of the Didymos system at around 6 km per second in 2022.
- Hera, which is scheduled to launch in 2024, will arrive at the Didymos system in 2027 to measure the impact crater produced by the DART collision and study the change in the asteroids orbital trajectory.

### Back2Basics: Near-Earth objects (NEOs)

- NEOs are comets and asteroids nudged by the gravitational attraction of nearby planets into orbits which allows them to enter the Earths neighbourhood.
- These objects are composed mostly of water ice with embedded dust particles, and occasionally approach close to the Earth as they orbit the Sun.

- NASA's Center for Near-Earth Object Study (CNEOS) determines the times and distances of these objects as and when their approach to the Earth is close.

CORONAVIRUS - HEALTH AND GOVERNANCE ISSUES

## What is a Serological Survey?

Science Tech Art Culture | GS3: Achievements Of Indians In S&T

Note4Students | From UPSC perspective, the following things are important :

Prelims level : Serological survey

Mains level : Paper 2- Health and pandemic control measures

A Serological Survey was recently conducted in New Delhi to determine the exposure of the novel coronavirus among the population.

Try this question from CSP 2019:

Which one of the following statements is not correct?

- (a) Hepatitis B virus is transmitted much like HIV.
- (b) Hepatitis B, unlike Hepatitis C, does not have a vaccine.
- (c) Globally, the number of people infected with Hepatitis B and C viruses is several times more than those infected with HIV.
- (d) Some of those infected with Hepatitis Band C viruses do not show the symptoms for many years.

### Serological Survey

- A serological survey seeks to assess the prevalence of the disease in a population by detecting the presence of specific antibodies against the virus.
- A serological test is performed to diagnose infections and autoimmune illnesses. It can also be conducted to check if a person has developed immunity to certain diseases.

- The survey included the IgG Enzyme-Linked Immunosorbent Assay (ELISA) test which estimates the proportion of the population exposed to SARS-CoV-2 infection.
- The IgG test is not useful for detecting acute infections, but it indicates episodes of infections that may have occurred in the past.
- The test has been approved by ICMR for its high sensitivity and specificity.

### Highlights of the Survey

- The study found the presence of antibodies in 22.86 percent of the people surveyed.
- It indicated that a large number of infected persons remain asymptomatic.

### Why needed such survey?

- Since it is not possible to test everyone in the population, serological studies are used as a tool to make an estimate of the extent of disease spread in the community.

### Conclusions from the survey

- Results show that a significant proportion of the population is still vulnerable to contracting the novel coronavirus infection.
- Containment measures need to continue with the same rigour.
- Non-pharmacological interventions such as physical distancing, use of face mask/cover, hand hygiene, cough etiquette and avoidance of crowded places etc. must be followed strictly.

FESTIVALS, DANCES, THEATRE, LITERATURE, ART IN NEWS

## In news: Madhubani/Mithila Paintings

Science Tech Art Culture | GS1: Arts & Culture

Note4Students | From UPSC perspective, the following things are important :

Prelims level : Madhubani paintings

Mains level : Not Much

An artist known as the mask man of Bihar dispatches masks with hand-painted Madhubani motifs all over India.

Also read:

<https://www.civilsdaily.com/161915-2/>

### Madhubani Paintings

- Madhubani art (or Mithila painting) is a style of Indian painting, practised in the Mithila region of Bihar.
- This painting is done with a variety of tools, including fingers, twigs, brushes, nib-pens, and matchsticks and using natural dyes and pigments.
- It is characterized by its eye-catching geometrical patterns.
- It was traditionally created by the women of various communities in the Mithila region of the Indian subcontinent.

- This painting as a form of wall art was practised widely throughout the region; the more recent development of painting on paper and canvas mainly originated among the villages around Madhubani.
- It is these latter developments that led to the term "Madhubani art" being used alongside "Mithila Painting."

### Its features

- It uses two-dimensional imagery, and the colours used are derived from plants. Ochre, Lampblack and Red are used for reddish-brown and black, respectively.

- It mostly depicts people and their association with nature and scenes and deities from the ancient epics.
- Natural objects like the sun, the moon, and religious plants like tulsi are also widely painted, along with scenes from the royal court and social events like weddings.
- Generally, no space is left empty; the gaps are filled by paintings of flowers, animals, birds, and even geometric designs.
- Madhubani art has five distinctive styles: Bharni, Kachni, Tantrik, Godna and Kohbar.
- This painting has also received a GI (Geographical Indication) status.

## NUCLEAR ENERGY

# [pib] Kakrapar Atomic Power Project (KAPP-3) in Gujarat

Science Tech Art Culture | GS3: Awareness In The Fields Of It, Space, Computers, Robotics, Nano-Technology, Bio-Technology, Pharma Sector & Health Science

Note4Students | From UPSC perspective, the following things are important:  
 Prelims level : Criticality of the nuclear reactors  
 Mains level : India's nuclear energy policy

The indigenously designed 700 MWe reactor at the Kakrapar Atomic Power Project has achieved Criticality.

### Try this PYQ from CSP 2013:

Q. The known forces of nature can be divided into four classes, viz, gravity, electromagnetism, weak nuclear force and strong nuclear force. With reference to them, which one of the following statements is not correct?

(a) Gravity is the strongest of the four (b) Electromagnetism act only on particles with an electric charge (c) Weak nuclear force causes radioactivity (d) Strong nuclear force holds protons and neutrons inside the nuclear of an atom.

### What is Criticality in Atomic/Nuclear Power Plants?

- Reactors are the heart of an atomic power plant, where a controlled nuclear fission reaction takes place that produces heat, which is used to generate steam that then spins a turbine to create electricity.
- Fission is a process in which the nucleus of an atom splits into two or smaller nuclei, and usually some by-product particles.
- When the nucleus splits, the kinetic energy of the fission fragments is transferred to other atoms in the fuel as heat energy, which is eventually used to produce steam to drive the turbines.
- For every fission event, if at least one of the emitted neutrons on average causes fission, a self-sustaining chain reaction will take place.
- A nuclear reactor achieves criticality when each fission event releases a sufficient number of neutrons to sustain an ongoing series of reactions.

### Controlling Criticality

- When a reactor is starting up, the number of neutrons is increased slowly in a controlled manner. Neutron-absorbing control rods in the reactor core are used to calibrate neutron production.
- The control rods are made from neutron-absorbing elements such as cadmium, boron, or hafnium.
- The deeper the rods are lowered into the reactor core, the more neutrons the rods absorb and the less fission occurs.
- Technicians pull up or lower down the control rods into the reactor core depending on whether more or less fission, neutron production, and power are desired.
- If a malfunction occurs, technicians can remotely plunge control rods into the reactor core to quickly soak up neutrons and shut down the nuclear reaction.

### Why is this achievement significant?

- It is the biggest indigenously developed variant of the Pressurized Heavy Water Reactor (PHWR).
- The PHWRs, which use natural uranium as fuel and heavy water as moderator, is the mainstay of India's nuclear reactor fleet.
- Until now, the biggest reactor size of the indigenous design was the 540 MWe PHWR, two of which have been deployed in Tarapur, Maharashtra.
- India works to ramp up its existing nuclear power capacity of 6,780 MWe to 22,480 MWe by 2031.
- The 700MWe capacity constitutes the biggest component of the expansion plan.

### Back2Basics: India's PHWR technology

- PHWR technology started in India in the late 1960s with the construction of the first 220 MWe reactor, Rajasthan Atomic Power Station, RAPS-1 under the joint Indo-Canadian nuclear co-operation.
- Canada supplied all the main equipment for this first unit, while India retained responsibility for construction, installation, and commissioning.
- For the second unit (RAPS-2), import content was reduced considerably, and indigenization was undertaken for major equipment.

- Following the withdrawal of Canadian support in 1974 after Pokhran-1, Indian nuclear engineers completed the construction, and the plant was made operational with a majority of components being made in India.

TRIBES IN NEWS

## Tribe in news: Siddi Community

Science Tech Art Culture | GS1: Population & Associated Issues, Salient features of Indian Society

Note4Students | From UPSC perspective, the following things are important :  
Prelims level : Siddi Tribals  
Mains level : NA

The Siddi community gets its first lawmaker in Karnataka. They are included as the Scheduled Tribes in Karnataka.

### Try this question from CSP 2019:

Q. Consider the following statements about Particularly Vulnerable Tribal Groups (PVTGs) in India:

1. PVTGs reside in 18 States and one Union Territory.
2. A stagnant or declining population is one of the criteria for determining PVTG status.
3. There are 95 PVTGs officially notified in the country so far.
4. Irular and Konda Reddi tribes are included in the list of PVTGs.

Which of the statements given above are correct?

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

### Siddi Tribe

- The Siddi also known as Sidi, Siddhi, Sheedi or Habshi, are an ethnic group inhabiting India and Pakistan.
- They are sometimes referred to as Afro-Indians. They are descended from the Bantu peoples of the East African region.
- Similarly, another term for Siddis, habshi, is held to be derived from the common name for the captains of the Abyssinian ships that also first delivered Siddi slaves to the subcontinent.
- They are primarily Muslims, although some are Hindus and others belong to the Catholic Church.

### How they came to India?

- The first Siddis are thought to have arrived in India in 628 AD at the Bharuch port. Several others followed with the first Arab conquest of the subcontinent in 712 AD.
- The latter groups are believed to have been soldiers with Muhammad bin Qasim's Arab army and were called Zanjis.
- In the Delhi Sultanate period prior to the rise of the Mughals in India, Jamal-ud-Din Yaqut was a prominent Siddi slave-turned-nobleman who was a close confidant of Razia Sultana.
- Siddis were also brought as slaves by the Deccan Sultanates. They also served in the Navy of Shivaji Maharaj.
- Several former slaves rose to high ranks in the military and administration, the most prominent of which was Malik Ambar.
- Later the Siddi population was added to via Bantu peoples from Southeast Africa that had been brought to the Indian subcontinent as slaves by the Portuguese.

DIGITAL INDIA INITIATIVES

## Need for open protocols and networks in the realm of internet

Science Tech Art Culture | GS3: Awareness In The Fields Of It, Space, Computers, Robotics, Nano-Technology, Bio-Technology, Pharma Sector & Health Science

Note4Students | From UPSC perspective, the following things are important :  
Prelims level : API

Mains level : Paper 3- Issues of dominance of some platforms on the internet and solution

We are familiar with the dominance of some platforms on the internet. That dominance starts to create problems. This article discusses the issues with dominance and suggests the solution drawing on the success of UPI.

### Platforms on the internet

- Platforms are technology layers that leverage the internet to bring together producers, resellers and consumers.
- Platforms reduce transaction costs by cutting out intermediaries.

- Amazon started by selling books but became a profitable giant by creating the e-commerce platform called Amazon Marketplace.
- The most valuable companies today are platforms for search, social interaction, advertising, insurance, travel, real estate, etc.

## Issues with the platforms

- 1) The promise of the internet was disintermediation, but the process has hit a speed breaker with major platforms taking on the role of mediation.
- 2) There may be multiple platforms in the game to start with, but due to network effects and the non-portability/lock-in, only a few monopolies space.
- 3) Big platforms have tried to create a sort of cartel in which to trap the customers while fencing off the rest of the internet.
- 4) The platforms amass data about users which is used to influence user behaviour, which is not limited to guiding the buying decisions.

## So, what is the solution?

### Let's look at the success story of the UPI

- Unified Payment Interface (UPI) is a set of protocols that standardises the language of money transfer.
- It is an interface : a simple and structured protocol for instructions and a clearinghouse that relays well-formed requests to concerned parties for execution.
- Once the language is there, a user may choose any app to link their bank account to a UPI ID and make a pay or collect request involving any other bank account.
- UPI handled 1.3 billion transactions in June 2020, overtaking the aggregate number of transactions of all legacy platforms.
- UPI succeeded because it treated all players, big or small, equally.
- This allowed third-party innovators to drive adoption by creating solutions that addressed the need of the people.

### Solution: Adopting of open protocols

- Application Programming Interfaces (or API) are protocols that define the meaning of data exchanged between two computers.
- Universally accepted API definitions could allow a cabbie to be discovered by any cab aggregator app the rider may choose.
- In healthcare, it could facilitate finding a doctor, booking an ambulance, taking out insurance, filing a claim, sharing a medical report or purchasing medicines from a pharmacy.

### Advantages of open protocols

- Open protocols create ecosystems that are non-rivalrous and non-excludable by design.
- Even smallest of application developers or start-ups can offer low-cost, locally relevant solutions using the protocol.
- We can address the needs of the diverse business community and achieve much greater penetration for e-commerce than the 10 per cent of today.
- Open systems have the potential to transform education, food delivery, by enabling entrepreneurs to compete on their quality and reputation alone.
- Portability from one application to another, privacy and data empowerment will be some of the issues taken care of.
- We can reduce our dependence on foreign platforms.

*Consider the question "What are APIs? Examine the issues created by the dominant internet platforms and how the adoption of open protocols for API could address the problem?"*

### Conclusion

With such a huge potential in APIs open protocols, the government must bring out the policy for the creation of open protocols and realise the untapped potential it offers.