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(16th-31th AUGUST 2018)



IAS MENTOR is education center for Academic & Competitive examination. IAS MENTOR offers IAS/PCS Exam preparation classes.

Mission

To bring Socio-Economic justice through most powerful weapon 'EDUCATION'

Description

IAS MENTOR is an education center founded by MR.SAHBAN ALI, Advocate, Ex. Founding Member & Director of Education360.Pvt .Ltd, one of the best teachers & mentors for CIVIL SERVICES EXAMS- I.A.S./P.C.S. & his brother SUBHAN ALI selected for I.E.S Interview (UPSC), selected in RRB as Senior Section Engineer, Selected in DDA , M.Tech (IIT Delhi), B.Tech. (Civil) JMI, New Delhi.

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ECONOMY

FALLING RUPEE

Why in news?

Recently, the Indian rupee weakened past the 71 mark for the first time ever.

More on news

- The rupee has registered a loss of about 10% of its value against the dollar since the beginning of the year making it the worst-performing currency in Asia.
- Other emerging market currencies, most notably the Turkish lira, the Argentine peso and the South African rand, have suffered much larger losses owing to a serious loss of confidence among investors.

Reasons of falling rupee

- **Increasing demand for the dollar across the globe:** The tightening of liquidity in the West, with the U.S. Federal Reserve raising interest rates, has played a major role in the strengthening of the dollar since February this year. Investors who earlier put their money in emerging markets have recently preferred American assets, which now yield higher returns.
- **Higher domestic inflation in emerging economies when compared to the West:** Thus, it is natural for these currencies to slide in value over time against the dollar and other major Western currencies.
- **Trade war** between China and America, leading to import restrictions with high tariffs is causing dollar to appreciate. Huge dollar purchases by oil importing companies have also weighed heavily on rupee.
- **Oil prices: Iran sanctions** have been driving oil prices higher despite OPEC move to raise output. The benchmark Brent crude surpassed the significant \$75-mark a barrel. This is bad for India as it is third largest importer of oil, hence **current account deficit** has been coming under pressure.
- **More imports than exports:** India's import bill has been significantly rising without increase in net exports. India's current account deficit is rising and is expected to go up to 2.5-3% of the gross domestic product (GDP) in the current financial year. Differently put, India is importing a lot more than it is exporting. Higher CAD in an environment of tightening financial conditions may continue to put pressure on the rupee

Impact of falling rupee

- **On imports:** the country's imports become more expensive as it takes more rupees to pay for the same quantum of imports.
- **On competitiveness:** As fewer dollars are required for a buyer to pay for the same

quantity of exports, India may gain its competitiveness which has been gravely hurt by an exchange rate policy that has prioritised a muscular rupee. It would also promote Make in India.

- **On inflation:** More expensive imports are likely to drive inflation upward, especially in India where input products constitute a large part of our imports. It also impacts the oil import bill which plays its own part in pushing inflation up. Rise in inflation would hurt investors sentiment as well.
- **On GDP growth:** On the one hand, costlier inputs and the subsequent increase in the prices of finished goods may have a positive impact on GDP while on the other hand, consequent decrease in demand due to higher prices could nullify this.
- **Widening of deficits:** As per analysts, every \$10 per barrel increase in oil prices could worsen current account and fiscal balances by 0.4% and 0.1% of GDP respectively.
- **On tourism:** trips abroad turning more expensive. On the flip side, the domestic tourism could grow as more tourists visit India since their currency now buys more here.
- **On employment:** In the medium term, export-oriented industries like Pharma sector, IT, gems and jewellery etc. may also create more jobs.

Steps that can be taken by government

- Long term solution o Reduce heavy dependence on imports as well as on oil.

Boost export industries by measures such as ensuring that exporters have easier access to tax refunds; a war-footing attack on red tape at the borders; and a clear commitment to opening up to new market-enhancing trade deals.

o **Attract FDI instead of FII**, through simplification of procedures, laws and dispute redressal. The rules for foreign borrowing should be liberalised by Indian firms to ensure higher inflows.

o **Maintain limit on deficit:** Although India's fiscal position has improved in recent years, compared to peers, the combined deficit is still on the higher side. The government should not allow the deficit to slip at this stage as it will increase macroeconomic stability risks.

o **Increase in interest rates** by central bank to control money outflow. However, cost of borrowing increases due to this which may cause fall in investment in the country.

o **Using foreign reserves to reduce volatility:** As of June 22, the RBI had foreign exchange reserves of \$407.81 billion, which it can sell in the open market. It is important to note, though, that reserves are only useful in reducing volatility and are not an antidote for poor economic management. If financial markets start believing that the country has problems at the fundamental level, then defending the currency can become extremely difficult.

- Short term solution

o **Increase in interest rates** by central bank to control money outflow. However, cost of borrowing increases due to this which may cause fall in investment in the country.

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ENABLING MONETIZATION OF INFRASTRUCTURE ASSETS IN INDIA

Why in News?

Government is drawing up a plan to sell public sector Infrastructure assets

More on the news

- The government is identifying assets, including rail lines, national highways and power transmission lines, for monetising through **infrastructure investment trusts (InvITs)**.

Significance

- Monetisation of assets being held in public sector undertakings through creation of InvITs will fast-track the agenda of **improving infrastructure in the country**. o This year's Budget suggested the use of InvITs to monetise roads by the National Highways Authority of India (NHAI).

- The government feels the role of central public sector enterprises is to develop new infrastructure and create a market rather than just earn returns from their investments.

- The **Twelfth Five Year Plan** (2012-2017) projected an investment of Rs 55.75 trillion in infrastructure during 2012-17, more than double that in the Eleventh Five Year Plan.

- o India's banking sector is under pressure as banks, weighed down by bad loans and weak profitability, are reaching their exposure limits in infrastructure lending.

Advantages

Monetization of infrastructure assets will,

- Strengthen the capital position of PSBs so that they are well placed to fund new credit growth opportunities
- Improve fund flow to the infrastructure sector by securitizing infrastructure assets, thus enhancing their access to institutional investors such as pension funds, insurance funds and mutual funds.
- Funds generated can be used to set up Greenfield projects
- It will make up for the lack of private investment.

Infrastructure Investment Trusts (InvITs)

- These are mutual fund like institutions that enable investments into the infrastructure sector by pooling small sums of money from multitude of individual investors for directly investing in infrastructure so as to return a portion of the income to unit holders of InvITs, who pooled in the money.
- InvITs are regulated by Securities and Exchange Board of India

UPI 2.0 LAUNCHED

Why in news?

Recently, National Payment Corporation of India (NPCI) has upgraded the Unified Payment Interface (UPI) with enhanced features.

New features in UPI 2.0

- **Linking of overdraft account** – Apart from the savings and current accounts, the UPI users can now link their overdraft account to it and all the facilities and benefits of overdraft account would be made available to the users.
- **One-time Mandate (account blocking)** – It allows customers or merchants to pre-authorize a transaction and pay at a later date. It would also ensure that the customers do not miss the payments.
- **Invoice in the inbox** – It allows the users to check the invoice sent by merchant in their own inbox prior to making the payments, thus allowing the customers to check the credentials beforehand.
- **Security Layer in QR** – The app allows the users to scan the QR code and check the authenticity of the merchants through notification to the user to ascertain the information.
- **Increased Transaction Limit** – The pre-existing transaction limit (1 lakh daily) has been raised to 2 lakh daily.

Challenges

- Even though the **transaction limit** has been raised to 2 lakh but certain banks still have limits much lower than 1 lakh while individual app such as BHIM, Whatsapp etc. have even lower limits.
- There is also **lack of initiatives from banks for penetration of QR Codes** for UPI whereas wallets have aggressively placed their stickers.
- The invoice in the inbox may have a **deeper security risk** as it may be accessible to anyone with the link which could lead to increased and unnecessary data harvesting.
- The overdraft feature of the UPI 2.0 may also lead to **over-spending** leading to banks charging the account holders.
- UPI 2.0 also doesn't have a **grievance redressal mechanism** that would ensure refund of failed transactions in a reasonable time period.
- The 'standing instruction' feature that would allow **recurring payments** from the user's bank account towards loan payment or bill payment after a specific interval, enabled by a one-time digital mandate need to be included to tap Rs 9 lakh crore worth of bill payments market which is still dominated by cash

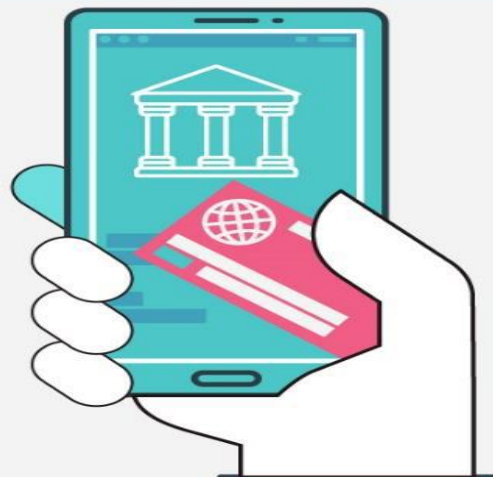


Unified Payments interface (UPI) is a **mobile application platform** that merges several banking features and facilitates seamless fund routing and merchant payments



KEY FEATURES

- **Immediate money transfer** Through mobile device
- **Single mobile application** for accessing different bank accounts
- Single Click **2 Factor Authentication**
- **Virtual addresses** are used for the transaction, no need to enter the details such as Card number, Account number, IFSC etc
- **In-App Payments, Simplified Merchant Payments**



USECASES/ BENEFITS

- **Round the clock availability**, potential replacement for NEFT (National Electronic Funds Transfer), RTGS (Real Times Gross Settlement), IMPS (Immediate Payment Service)
- Suitable for e-Com and m-Com transactions
- Potential **replacement for Cash on Delivery model**
- No need to go to ATM more often
- **Barcode (Scan and Pay) based payments**
- **Good for people without Credit/ Debit cards**
- Rendering exact amount
- **Utility Bills Payments**



WHAT CAN NOT BE DONE

- Customer cannot link a wallet to UPI, only bank accounts can be added
- Once Payment is initiated, it can not be stopped
- Amount more than Rs 1 Lakh can not be transferred
- As of now, UPI is only available on Android Mobile Operating System

Following Banks have participated in the Pilot project:

- | | | |
|-----------------------------|------------------------|------------------------|
| ○ Andhra Bank | ○ Ratnakar Bank Ltd | ○ IndusInd Bank |
| ○ Axis Bank | ○ Canara Bank | ○ Karnataka Bank |
| ○ Bharatiya Mahila Bank | ○ Catholic Syrian Bank | ○ UCO Bank |
| ○ Bank of Maharashtra | ○ DCB Bank | ○ Union Bank of India |
| ○ Oriental Bank of Commerce | ○ Federal Bank | ○ United Bank of India |
| ○ Punjab National Bank | ○ HDFC Bank | ○ Vijaya Bank |
| ○ Thane Janta Sahkari Bank | ○ ICICI Bank | ○ Yes Bank |

WORLD'S FIRST BLOCKCHAIN BOND

Why in News?

The **World Bank** has launched the world's first public bond created and managed using only blockchain in order to test how the technology might improve current bond sales practices.

More About News

- The project is called '**BONDI**' (Blockchain Operated New Debt Instrument), which is also reference to the Bondi Beach in Sydney.
- **Commonwealth Bank of Australia (CBA)** has been mandated by the World Bank to be the sole arranger of the bond.
- It is a **Kangaroo bond** (foreign bonds issued in Australia in local currency).

Benefits of Blockchain Bonds

- The launch of the blockchain bond is an initial step in moving bond sales away from manual processes towards **automation**.
- Blockchain technology could help in cutting **down bond settlement time** "from T+2 days currently to T+2 minutes".
- The technology has potential to deliver substantial **cost savings** as intermediary activities can be eventually reduced or removed.
- It also improves the **reputation of crypto-technologies** which are currently viewed suspiciously.



POLITY AND CONSTITUTION

Why in news?

Law commission of India has publicized a consultative paper for a comprehensive public discussion regarding Section 124A of the Indian Penal Code 1860, which deals with sedition.

Understanding Sedition - Brief Introduction

• **What is Sedition** - As per Section 124A of IPC, Sedition is an act that brings or attempts to bring into hatred or contempt, or excites or attempts to excite disaffection towards the Government established by law in India by words, either spoken or written, or by signs, or by visible representation, or otherwise. As per this Section, a person is liable to be punished with imprisonment for life or imprisonment up to three years with fine.

• **Concerns regarding Sedition** – Relevance of this Section in a democratic and independent nation is a matter of continuous debate. Use of Section 124A by the government might go beyond the reasonable restrictions provided under fundamental right to freedom of speech and expression as per Article 19 of the Constitution. There is an apprehension that this Section might be misused by government of the day to suppress political dissent, constructive criticism of government and its policies thereby stifling democratic governance. o The countries like UK, Australia have already abolished sedition laws considering them draconian.

Historical Background: Colonial Relic

- **Origin and evolution** - The legitimacy of British colonial governance system rested on silencing any kind of political dissent or dissatisfaction thus the right to freedom of speech and expression of individuals was suppressed through imposition of Section 124A. Section 124A IPC added through Special Act XVII of 1870, defined Sedition and 1898 amendment made it a punishable offense. Various leaders such as Mahatma Gandhi, Bal Gangadhar Tilak have been punished under this.

- **Post Constitutional Journey and Sedition vis-a-vis Article 19 of the Indian Constitution** - Various verdicts by Indian Judiciary have led to re-interpretation and re-examination of 'sedition' in light of *Article 19 of the Constitution* in order to strike a balance between right to free speech and expression and power of State to impose reasonable restrictions (*Article 19(2)*). These verdicts have led to narrowing the ambit of 'Sedition' making its meaning more explicit, precise and unambiguous.

- **Essential ingredients for a seditious act** - Various verdicts in Romesh Thappar case, Kedar Nath Singh case, Kanahiya Kumar case re-defined a seditious act only if it had essential ingredients as:

- o Disruption of public order
- o Attempt to violently overthrow a lawful government
- o Threatening the security of State or of public.

- **Judicial verdicts in defense of Right to freedom of speech and expression** - The judicial pronouncements in cases like AK Gopalan vs State of Madras, Ramesh Singh vs Union of India, Shreya Singhal vs State elaborated 'what does not tantamount to sedition':

- o Political dissent
- o A thought non-consonant with the government and its policies
- o Expression of frustration over the state of affairs e.g. racist state or gender biased state
- o Expressing different or conflicting ideas of Indian nation
- o Right to offend
- o Peaceful protest

Sedition vis-a-vis other Statutes

- Several sections of IPC deal with offenses against State as well as against public tranquility. Another act named Unlawful Activities Prevention Act 1971 has been enacted to prevent terrorist activities.

- Since sedition is an offense against the State, higher standards of proof must be applied to convict a person for this offense. It must be invoked for *gravest of offenses against State*. If the same doesn't fall within the ambit of seditious act, it might attract provisions of some other laws/statutes as mentioned above.

Way Forward

- Dissent acts as a safety valve in a vibrant democracy and every restriction on free speech and liberty must be carefully imposed weighing its reasonableness.
- If the country is not open to positive criticism, there lies little difference between the pre-

and post-independence eras

- Debates and discussion with respect to essential questions like need of sedition law in a modern democratic society vis-vis freedom of speech, redefining sedition etc. needs to be started among the legal luminaries, lawmakers, Government, NGOs, academia, students and above all, the general public.

PUNJAB'S SACRILEGE LAW

Why in news?

Punjab cabinet has proposed to amend Section 295A of Indian Penal Code.

Provisions of the amendment

- It will introduce a new section 295AA in IPC.
- It proposes life imprisonment for whosoever cause injury, damage or sacrilege to four religious texts, that is the Guru Grant Sahib, the Quran, the Bhagwat Geeta and the Bible.
- Aims to promote social harmony and public order.

Criticism

- Punishment of life imprisonment is disproportionate. Further, already Section 295A of IPC exists which criminalizes 'deliberate and malicious acts intended to outrage religious feelings'. Under it, the scope of punishment is 3 years with or without fine.
- Sacrilege is vague which makes the law too vast and liable for misuse.
- Curbs freedom of speech. Also, there is a fear that we are increasingly becoming a society governed by criminal law taking away substance of our fundamental rights.
- The article defiles the sacredness of the Book because the status of the Book now becomes an artefact of state power. In other words, rather than being luminous, potent and transcendent texts, their status is now reduced to a section of the Indian Penal Code.
- Punjab's sacrilege legislation is akin to Pakistan's blasphemy laws, which have led to the ascendance of theocracy and religious violence in Pakistan. State interfering in the religious matters is inconsistent with idea of secular India.

Way forward

Supreme Court has upheld the Constitutional validity of section 295A in 1957 as an instrument to punish aggravated insults to religion, with the intention to 'disrupt public order' which is well within the purview of reasonable restrictions provided under Article 19(2) of the Indian Constitution. Going beyond Section 295A can prove to be a double-edged sword. It needs comprehensive debate before it is amended.

FAMILY LAW REFORMS

Why in News?

Law Commission of India has released a Consultation Paper on '**Reform of Family Law**'

Background

- The ministry of law and justice made a reference to the Law Commission of India on June 2016 to examine matters in relation to the **Uniform civil code**.
- The aim was not to identify an identical procedure for all but **to correct the gender discriminatory nature of family laws across religions**.
- In the absence of a consensus on a uniform civil code, the best way forward for India

may be to **preserve the diversity of personal laws while ensuring that they do not contradict the fundamental rights.**

- It pointed out that the **prevailing personal laws place women at a disadvantaged position.**

- The report deals with **four key issues:** marriage and divorce, custody and guardianship, adoption and maintenance, and succession and inheritance.

Recommendations

- **Age of consent for marriage:** It advocates for **change in the age of consent for marriage**, opining that the current difference of 18 years for girls and 21 years of age for

- boys simply contributes to the stereotype that wives must be younger than their husbands.

- **Marriage and Divorce**
 - o **Grounds for divorce (No-fault Divorce):** It refers to a situation where the emotional and other bonds, which are the essence of marriage, have disappeared and only a façade remains.

- o The commission suggested that where a marriage has ceased to exist both in substance and in reality, **divorce should be seen as a solution** rather than a taboo.

- o **Community of Property upon Divorce and Maintenance:** It recommends that a no-fault divorce must accompany community of self-acquired property, owing to the fact that women are usually left in a vulnerable position while allowing for immediate and unilateral divorce.

- o **Rights of Differently-Abled Persons in Marriage:** The paper recommends amendments to exclude from grounds for divorce, forms of illnesses that can be cured or controlled with adequate medical treatment or counselling.

- o **Special Marriage Act:** It calls for **modification of the 30 day notice period for registration of marriage**, in view of the misuse of the provision to discourage an inter-caste or an inter-religion marriage.

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- **Custody and Guardianship:** Guardians and Wards Act, 1890 to be amended to the extent that a **husband is not regarded as the guardian of the wife**, and both the parents equally share responsibility of the child born from such wedlock

- **Adoption and Maintenance:** Juvenile Justice (Care and Protection of Children) Act, 2015 is inadequate in addressing the jurisprudential questions on adoption. It then strongly suggests the use of the term 'parents' in place of 'mother and father' in adoption, to enable individuals of all gender identities to avail of the Act. o It also recommends that the word 'child' should replace son and daughter so as to ensure that intersex children are not excluded from being adopted.

- o The current law does not permit a male adult to adopt a female child. It is suggested that there should be a provision of adoption to a single parent irrespective of gender and gender identity of the child as well as the parent.

- Succession and Inheritance. o It advocates for abolition of coparcenary and suggests that the right in a property by birth be extinguished by opting for 'tenancy-in-common' instead of 'joint tenancy'.

- o **Hindu Undivided Family (HUF) has also been suggested to be abolished**, noting that the institution of HUF was being used for **tax avoidance.**

What is Uniform Civil Code? • A Uniform Civil Code essentially means a common set of laws governing personal matters for all citizens of the country, irrespective of religion.
 • Currently, different laws regulate these aspects for adherents of different religions.

WRONGFUL PROSECUTION

Why in News?

Percentage of under trials	Time spent in prisons
25.1%	More than 1 year
17.8%	Upto 1 year
21.9%	3 to 6 months
35.2%	Upto 3 months

Recently, Law Commission of India (LCI) submitted its 277th report titled “**Wrongful Prosecution (Miscarriage of Justice): Legal Remedies**” to the Government.

Background

- **India has one of the highest under trial populations in the world:** According to National Crime Records Bureau’s (NCRB) annual Prison Statistics India (PSI) report 2015, there were more than 4.19 lakh prisoners across India out of which 67.2% were under trials (i.e. people who have been committed to judicial custody pending investigations or trial). During 2015, more than 82,500 prisoners were released by acquittal and more than 23,400 prisoners were released in appeal.
- Undertrials spend a substantial period of time awaiting trials/judicial determinism of their case which becomes a **graver miscarriage of justice** when the person is wrongfully accused and incarcerated pending trial and proceedings which he should not have been subjected to in the first place.
- **Such situations often result in violations of fundamental rights** of the victim under Article 21 and 22 of the constitution, gross human rights violations, social stigma faced, precious years lost, mental, emotional and physical harassment, huge expenses incurred during the process and overcrowding of prisons.
- **Infringement of a fundamental right due to police and prosecutorial misconduct involves State liability.** However, there is a lack of effective response from the State to the victims of such wrongful prosecutions within the current Criminal Justice System in the country. Remedies available under the present system remain complex and uncertain, creating only an ex-gratia obligation without any statutory or legal backing for the rights of victim.
- **Article 14(6) of International Covenant on Civil and Political Rights, 1966 (ICCPR)** dealing with miscarriage of justice creates an obligation on the State parties to enact a legislation ensuring that these victims are compensated within a reasonable period of time. India ratified the ICCPR in 1968 but is yet to enact the legislation for the same.

- Delhi High Court in **Babloo Chauhan Case** had requested LCI to examine the possibility of the legislation for providing relief and rehabilitation to victims of wrongful prosecution and incarceration in India. LCI has therefore set out standards to be applied in the above cases of miscarriage of justice and has also presented a **Draft Code of Criminal Procedure (Amendment) Bill, 2018** to suitably incorporate the recommendations.

Recommendations of LCI

- **‘Wrongful prosecution’ to be the standards of miscarriage of justice, as against ‘wrongful conviction’ and ‘wrongful incarceration’:** ‘Wrongful prosecution’ would include cases where the accused and not guilty of the offence, and the police and/or the prosecution engaged in some form of misconduct in investigating and/or prosecuting the person. It would include both the cases where the person spent time in prison as well as where he did not; and cases where the accused was found not guilty by the trial court or where the accused was convicted by one or more courts but was ultimately found to be not guilty by the Higher Court.
- **Need for a transparent legislative process:** There needs to be an established legislative process, according a transparent, uniform, affordable, efficacious and timely remedy for the loss and harm inflicted on the victims on account of wrongful prosecution.
- **Designation of Special Courts in each district** for adjudicating upon claims of compensation for wrongful prosecution. The cause for action would arise if there was malicious prosecution or prosecution without good faith and there was an acquittal.
- **Compensation, both pecuniary and non-pecuniary, to effectuate the rehabilitation of the victims into the society:** While pecuniary assistance will be in terms of monetary award as may be determined by special court, non-pecuniary assistance will be awarded in the form of services such as counseling, mental health services, vocational/employment skills development, removal of disqualifications that might affect chances of accused persons finding employment in public and private sectors, admission into educational institutes, etc.
- **Factors to determine compensation:** Compensation in such cases would depend upon various factors, including the seriousness of the offence, severity of punishment, the length of incarceration, loss or damage to health, psychological and emotional harm and the status of the victim in the society.

Current provisions provide for following remedies:

Currently three categories of court based remedies with respect to miscarriage of justice are available to a victim: • **Public law remedy:** it is treated as a violation of fundamental rights under **Article 21** (the right to life and liberty) and **Article 22** (protection against arbitrary arrests and illegal detention, etc.) of the Constitution, that invokes the writ jurisdiction of Supreme Court and High Courts under **Article 32 and 226** respectively.

• **Private law remedy:** it exists in the form of civil suits against the state for monetary damages on account of **tortious acts** of public servants- especially negligence by a public servant in the course of employment. Both public and private law remedies are victim centric in nature.

• **Criminal law remedy:** it holds the wrong doer accountable i.e. proceedings with criminal action against the concerned officers of the State for their misconduct.

International Covenant on Civil and Political Rights, 1966 • It is one of the key documents dealing with the miscarriage of Justice.

- It commits its parties to respect the civil and political rights of individuals, including the right to life, freedom of religion, freedom of speech, freedom of assembly, electoral rights and rights to due process and a fair trial.

- As of August 2017, the Covenant has 112 parties and six more signatories without ratification.

- It is part of the International Bill of Human Rights, along with the International Covenant on Economic, Social and Cultural Rights (ICESCR) and the Universal Declaration of Human Rights (UDHR).

- Other important parts of the covenant are-

- o Right to Physical integrity
- o Liberty & Security of Persons
- o Procedural fairness & Right of accused
- o Individual Liberties
- o Political Rights



INTERNATIONAL

ASIAN DEVELOPMENT BANK- STRATEGY 2030

Why in News?

Recently, Asian Development Bank (ADB) released its long-term corporate strategy i.e. Strategy 2030.

About the ADB- Strategy 2030

- It is policy framework for ADB that sets out the its broad vision and strategic response to the **evolving needs of Asia and the Pacific**.

- **Social Dimension:** In contrast to earlier Strategy 2020- the Strategy 2030 document emphasis on human and social factors, in addition to the usual infrastructure and the private sector.

- **Regional or Country Specific Approach:** Due to sheer diversity of this region (include both landlock and Small island countries), ADB has, for the first time, adopted a differentiated approach to various groups of member nations.

- **One ADB Approach:** This includes bringing together expertise and knowledge in a range of areas across the

- ADB as an institution.

Priority Areas of Strategy 2030

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- Addressing remaining poverty and reducing Inequalities: Under this policy efforts will also address **non-income dimension** of poverty.
- Accelerating progress in gender equality
- Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability
- Making cities more liveable
- Promoting rural development and food security
- Strengthening governance and institutional capacity
- Fostering regional cooperation and integration

India and ADB

- India was a founding member of ADB and is now the fourth-largest shareholder, but operations in the country began only in 1986, when India opted to become a borrowing member.
- The **country partnership strategy (CPS) 2018-2022** will focus on three pillars.
- o Pillar 1 will boost economic competitiveness to create more and better jobs by expanding infrastructure networks for transport and energy along economic corridors, enhancing management of corridor development and urban centers, and addressing the skills gap to support industrialization.
- o Pillar 2 will provide inclusive access to infrastructure networks and social services by improving the infrastructure bottlenecks in lagging regions, providing better municipal services for the urban poor, and supporting investments in rural infrastructure to improve agricultural productivity and reduce the growing rural-urban income gap. Efficient public sector management will be supported to create fiscal space for investments in inclusive growth for social and rural development.
- o Pillar 3 will address environmental degradation through mitigating the negative impacts of climate change and promoting sustainable natural resource use in the project design.



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Related Information

About Asian Development Bank (ADB)

- ADB was founded in 1966 and India is a founding member to it.
- The ADB has 67-member countries, including —48 from the Asian region.
- ADB has been led conventionally by a Japanese governor.
- Top 5 shareholders in ADB are: Japan (15.6%), United States (15.6%), People's Republic of China (6.4%), India (6.3%) and Australia (5.8%)
- It provides direct assistance to private enterprises of developing member countries through equity investments and loans.



ENVIRONMENT

KERALA FLOOD

Why in news?

Recently, Kerala witnessed their worst flood since 1924, killing at least 480 people, displacing 780,000 and causing ₹ 50,000 crore worth of damage in State.

Background

- **India's Vulnerability to Floods:** 40 million hectares out of a geographical area of 3290 lakh hectares is prone to floods in country.
- **Impact of Climate Change:** Intensity of extremely wet spells and extremely dry spells during the South Asian monsoon season have been increasing since 1980.
- **Financial Drain:** Floods costs the country Rs. 8,12,500 crore between 1953 and 2011 and according to World Resources Institutes (WRI), by 2030, up to \$154 billion of the country's gross domestic product could be exposed to flood risks each year, as climate change fosters more extreme weather events.
- **Comptroller and Auditor General (CAG) in June 2017** says the States have failed to conduct a scientific assessment of flood-prone areas and of the 349 dams surveyed, only 40 prepared detailed disaster management plans.
 - o It also pointed out that **poor dam management** was responsible for India's floods, such as Bihar in 2016 and Surat in 2006. In the 2015 Chennai floods, which claimed 295 lives, violation of dam safety norms was a critical factor.

Flood vulnerability in Kerala

- **Rashtriya Barh Aayog (RBA)** had estimated 8.70 lakh hectares area as flood prone out of 38.90 lakh hectares of geographical area in Kerala.
- **Kerala State Action Plan on Climate Change (SAPCC)** in 2014 assessed that state is severely threatened by climate change (see infographic).
- **Central Water Commission (CWC)**, India's only flood forecasting agency, does not have

any flood forecasting system in Kerala.

- **Gadgil report on fragile ecosystem of Western Ghats (2011)**, had warned that illegal mining and deforestation had led to massive encroachment of river fronts in the state, and there was an urgent need for corrective action.
- It also said that, unchecked quarrying and construction in ecologically sensitive areas, can cause disastrous floods due to premature siltation in many reservoirs in the Western Ghats.

Reasons

- **Incessant rainfall:** Kerala received 2,346.6 mm of rainfall against a normal of 1,649.5 mm since the beginning of June. The “active” phase of the monsoon is when the monsoon trough moves south of its normal position causing heavy and intense showers in the southern peninsula

- **Dam Mismanagement:** There was an instant release of water from dam due to heavy rain, as dam reservoirs were not emptied before the onset of rain, flooding the nearby regions at a much faster rate than expected. Kerala government claimed that sudden releases of water from the Mullaperiyar dam (located in Kerala, but operated by Tamil Nadu) was a cause for the floods in the State.

Stone quarrying: A recent study by the **Kerala Forest Research Institute** pointed out that there were 5,924 big, medium and small quarries in the state. Mudslides and landslides were reported in 211 different places across the state which is attributed to increasing stone quarrying activity and large-scale deforestation.

- Other factor which aided in flood are **deforestation drive** for development purpose, **Uncontrolled sand mining** has constrained river flows, while the rapid **spread of high-rise buildings** on unstable hill slopes has weakened the soil. This unplanned development has left the area susceptible to flash floods and landslides.

- **Large expanse of low lying areas:** About 10 per cent of its geographical area is below the sea level.

Impact

- **Impact on Agriculture:** Standing paddy crop and plantations of banana, rubber, cardamom, pepper and arecanut have been devastated as the floods have been concentrated in the plantation districts of Idukki, Kottayam and Wayanad.

- **Loss of Livelihood:** According to Care Ratings, employment of nearly 41.3 lakh has been affected and the wage loss is estimated at around Rs 4,000 crore for August.

- **Loss of Soil Fertility:** Flood cause heavy damages to top soil, which takes time to be restored to its natural state.

- **Cultural loss:** Kerala government has cancelled the celebration of **festival Onam**, the harvest festival of Kerala.

- **Economic Impact:** According to ASSOCHAM, floods in Kerala could potentially have caused damage worth Rs 15,000-20,000 crore, which include infrastructural damages to 134 bridges and 16,000 km of Public Works Department roads.

- **Disease outbreak:** Following severe flooding, 196 **leptospirosis (rat fever) cases** and nine deaths have been confirmed in Kerala.

- Leptospirosis (also called Weil's disease) is a waterborne bacterial disease, caused by the leptospira bacteria. It rarely spreads from person to person and can be treated with common

antibiotics. It's incubation period is between five and 14 days.

NDMA guidelines on Management of Flood

- Shifting the focus to preparedness by implementing Flood Management Programs (FMPs).
- Ensuring regular monitoring of the effectiveness and sustainability of various structures and taking appropriate measures for their restoration and strengthening.
- Continuous modernization of flood forecasting, early warning and decision support systems.
- Ensuring the incorporation of flood resistant features in the design and construction of new structures in the flood prone areas.
- Drawing up time-bound plans for the flood proofing of strategic and public utility structures in flood prone areas.
- Improving the awareness and preparedness of all stakeholders in the flood prone areas.
- Introducing appropriate capacity development interventions for effective FM (including education, training, capacity building, research and development, and documentation.)
- Improving the compliance regime through appropriate.

Dam Management in India

• About 75 percent of the large dams in India are more than 25 years old and about 164 dams are more than 100 years old. A badly maintained, unsafe dam can be a hazard to human life, flora and fauna, even India has had 36 dam failures in the past.

Dam Rehabilitation and Improvement Plan (DRIP)

- It is an externally-aided project. 80% of the total project is provided by the World Bank as loan/credit and remaining 20% is borne by the States / Central Government (for CWC).
- This project started in April 2012, for repair and rehabilitation of initially 225 Dams across seven states namely Jharkhand (DVC), Karnataka, Kerala, Madhya Pradesh, Odisha, Tamil Nadu, and Uttarakhand (UJVNL).
- At present there are 198 Dams under this project which are scheduled for completion in June 2018.
- Objective of DRIP –
 - to improve the safety and operational performance of selected existing dams and associated appurtenances in a sustainable manner, and
 - to strengthen the dam safety institutional setup of participating States / Implementing Agencies.

Emergency Action Plan

- The Emergency Action Plan (EAP) for the Dams under DRIP has been proposed. EAP is a formal plan that identifies potential emergency conditions at a dam and prescribes the procedures to be followed to minimize loss of life and property damage.
- EAP help in streamlining the efforts and bring about better coordination among different agencies to execute rescue and relief activities.

Dam Safety Bill, 2018

- The objective of this Bill is to help develop uniform, countrywide procedures for ensuring the safety of dams and provides for proper surveillance, inspection, operation and maintenance of all specified dams in the country to ensure their safe functioning.

- It provides for constitution of a **National Committee on Dam Safety** which shall evolve **dam safety policies** and recommend necessary regulations
- It provides for establishment of **National Dam Safety Authority** as a **regulatory body** which shall discharge functions to implement the policy, guidelines and standards for dam safety in the country.
- The Bill provides for constitution of a **State Committee on Dam Safety** by State Government.

About State Committee on Dam Safety

- It will ensure proper surveillance, inspection, operation and maintenance of all specified dams in that State and ensure their safe functioning.
- It lays onus of dam safety on the dam owner and provides for penal provisions for commission and omission of certain acts.
- Every state having specified number of dams will establish **State Dam Safety Organization** which will be manned by officers from the field dam safety preferably from the areas of dam-designs, hydro-mechanical engineering, hydrology, geo-technical investigation, instrumentation and dam-rehabilitation.

NATIONAL REDD+ STRATEGY

Why in news?

Union Ministry for Environment, Forest and Climate Change (MoEFCC) **released National REDD+ Strategy**, which will help to fulfill **India’s NDC commitment under Paris Agreement of climate change.**

COP 11, 2005 at Montreal	Coalition of 9 rainforest nations sought attention to growing threat of deforestation and introduced concept of Reducing Emission from Deforestation (RED)
COP 12, 2006 at Nairobi	‘ Compensated Conservation ’ policy introduced by India intended to compensate countries for maintaining and increasing carbon pools of their forests.
COP 13, 2007 at Bali	‘ Compensated Conservation ’ policy approach finally recognized
COP 16, 2010 at Cancun	Official entry of REDD as a UNFCCC-enabled mitigation mechanism
COP 19, 2013 at Warsaw	It agreed on Warsaw REDD+ framework <ul style="list-style-type: none"> • Finance: It encourages financing entities, including the Green Climate Fund in a key role, to channel adequate and predictable results-based finance in a fair and balanced manner, and increasing the number of countries that are in a position to obtain and receive payments for results-based actions

- It recognizes the importance of **incentivizing non-carbon benefits** for the long-term sustainability.
- It encourages Parties and the private sector to take actions to **reduce the drivers of deforestation** and forest degradation
- It encourages stakeholders to meet, on a voluntary basis to address issues relating to **coordination** of support
- **Modalities for national forest monitoring systems:** It should be guided by IPCC guidance and provide data and information that are transparent and consistent over time.
- Framing procedures for the technical assessment to support **capacity-building** for development and assessment of forest reference emission levels and/or forest reference levels.

Need for National REDD+ Strategy

- Forest is the second-largest land use in India after agriculture.
- Forestry sector in India can make positive contribution for climate change mitigation like carbon mitigation services of India's forest by improving carbon stocks (carbon pools).
- As estimated, REDD+ programme could provide for capture of around 1 billion tonnes of additional CO₂ over the next 3 decades and significant financial incentives as carbon services under REDD+ including **flow of positive incentives to local communities**.

National REDD+ Strategy

The strategy seeks to address drivers of deforestation and forest degradation and also developing a roadmap for enhancement of forest carbon stocks and achieving sustainable management of forests through REDD+ actions. Important provisions include -

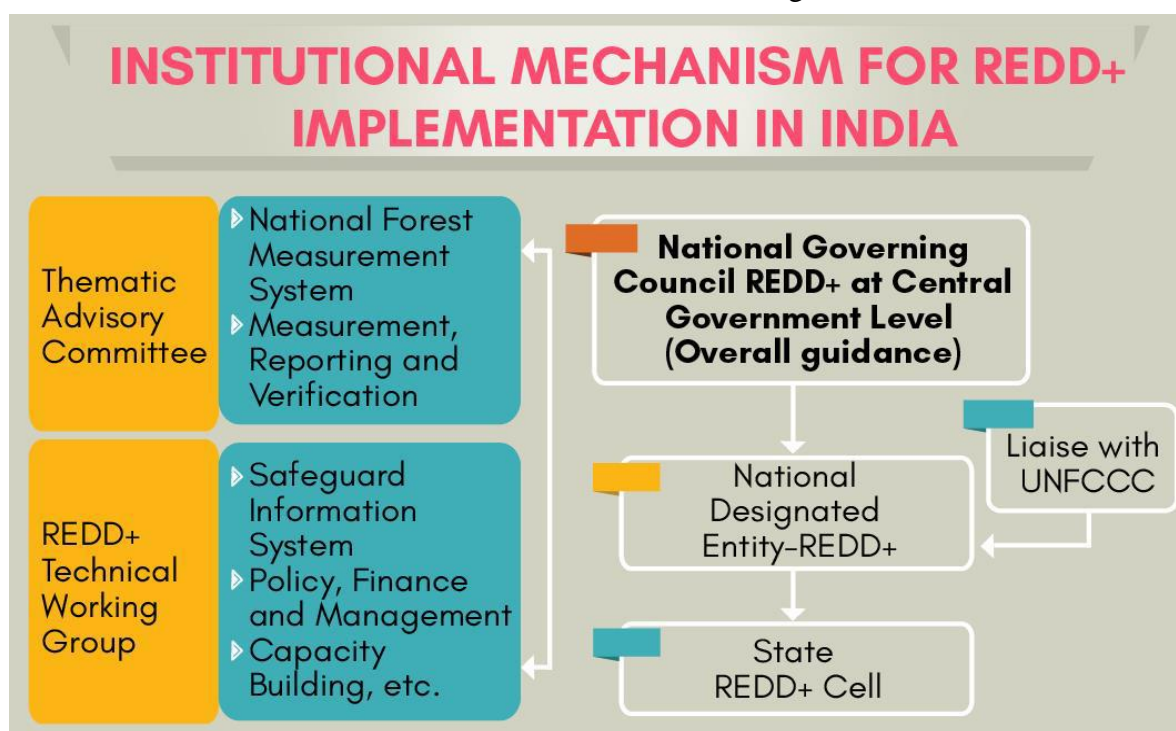
- Coverage of REDD+
 - o REDD+ will cover all trees within forest areas and tree outside forest (TOF)
 - o Research is being undertaken to assess the potential of carbon sequestration by grasslands, and coastal sea grasses, salt marshes, phytoplankton etc.
- Phased approach of REDD+
 - o *Phase 1:* development of national strategies or action plans, policies and measures, and capacity-building.
 - o *Phase 2:* implementation of national policies, measures and national strategies or action plans
 - o *Phase 3:* evolution into results based actions that should be fully measured, reported and verified.

• Sub-national REDD+ Approach

- o The country has been divided into 14 physiographic zones by the FSI. State Governments may collaborate and develop REDD+ Action Plan in a physiographic zone.

REDD+ Activities

- o It includes Reducing Deforestation, Reducing Forest Degradation, Conservation of Forest Carbon Stocks, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks.
- o Initiatives for Enhancement of Forest Carbon Stocks include Namami Ganga, Forestry Interventions for Other Major River Catchments, Green Highways (Plantation, Transplantations, beautification & Maintenance) Policy – 2015 and innovative programmes like Green Army of Maharashtra.
 - Developing strategies for addressing Deforestation and Forest Degradation
 - o Creating proper awareness amongst stakeholders.
 - o Improved Cook Stoves for Addressing Forest Degradation
 - Capacity Building and Trained Human Resource
 - o Building a Cadre of Community Foresters.
- Appointing Targets & appropriate Infrastructure Development
- o State/UT Governments to work out the appropriate targets of afforestation and reforestation (A&R) for each State/UT that would enable the country meet the objectives of Green India Mission and NDC target.
 - Funding
 - o Finance Commission has recommended devolution of funds to states attaching a weightage of 7.5% of the State’s forest cover.
 - o Compensatory Afforestation Fund.
 - o Green Climate Fund and Other External Sources of Funding



Carbon pools

A system that has the capacity to store or release carbon.

The Marrakesh Accords recognize five main carbon pools or reservoirs in forests: Above-ground biomass, below-ground biomass, dead wood, litter and soil organic matter.

REDD+

REDD+ means “Reducing Emissions from Deforestation and forest Degradation”, conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks in developing countries. REDD+ aims to achieve climate change mitigation by incentivizing forest conservation.

KAZIRANGA NATIONAL PARK

Why in news?

The Kaziranga National Park (KNP) had been split into two divisions — the existing Eastern Assam Wildlife and the new Biswanath Wildlife park with Brahmaputra flowing in between.

More on news

- The Kaziranga South Division will cover all areas of Kaziranga situated on the south bank of the Brahmaputra with existing four Ranges viz. Kaziranga (Kohora), Eastern Range (Agaratoli), Western Range (Bagori) and Burhapahar Range.
- The **headquarters of the North division** will be at Biswanath with three ranges under this division at Biswanath, Panpur and Gohpur (Gomeri). The Panpur Range and the Gohpur Range (Gomeri) will be newly created under the proposed Kaziranga North division.

Reason for Bifurcation

Due to expansion of area under the KNP, it became difficult for one division to manage the National Park and because of this these areas did not get the desired attention. Specific issues faced are-

- **Poachers remained un-convicted** due to large area of the park, which can now be curbed better as it mostly happened in the northern region, and officers from the southern side were unable to prevent it.
- The **funds allocated** were not only under-utilised but were largely unused, with bifurcation separate authorities will be more accountable.
- It will also **ease overcoming staff shortage** as northern region can now recruit from northern Assam separately and so with the southern region.

Tourism was also suffering largely due to above mentioned reasons, bifurcation will lead to better management and increased visitation and hence, the revenue.

Criticism

It is predicted that this decision may have benefits in the short run, but in the long run it may-

- come at the cost of the ecology, road and river network.
- result in increased noise and air pollution due to increased footfall.

- make the animals more 'zoo-like', and hence tamer, taking away the sense of adventure that attracts tourists to the Kaziranga National Park.

About the Kaziranga National Park

- Kaziranga protected area was established in 1904 and is located on the edge of the Eastern Himalayan biodiversity hotspot. It is a UNESCO world heritage site.
- The park is home to large breeding populations of elephants, wild water buffalo, and swamp deer other than the one-horned rhino.
- Kaziranga is recognized as an 'Important Bird Area' by Birdlife International for the conservation of avifaunal species.
- There are five ranges in the Eastern Assam Wildlife Division. These are Kaziranga (Kohora), Eastern Range (Agaratoli), Western Range (Bagori), Burhapahar Range and Northern Range with headquarters at Biswanath. Of these ranges, four are located on the southern bank of the Brahmaputra, while the Northern Range is located on the north bank of the river.



SCIENCE AND TECHNOLOGY

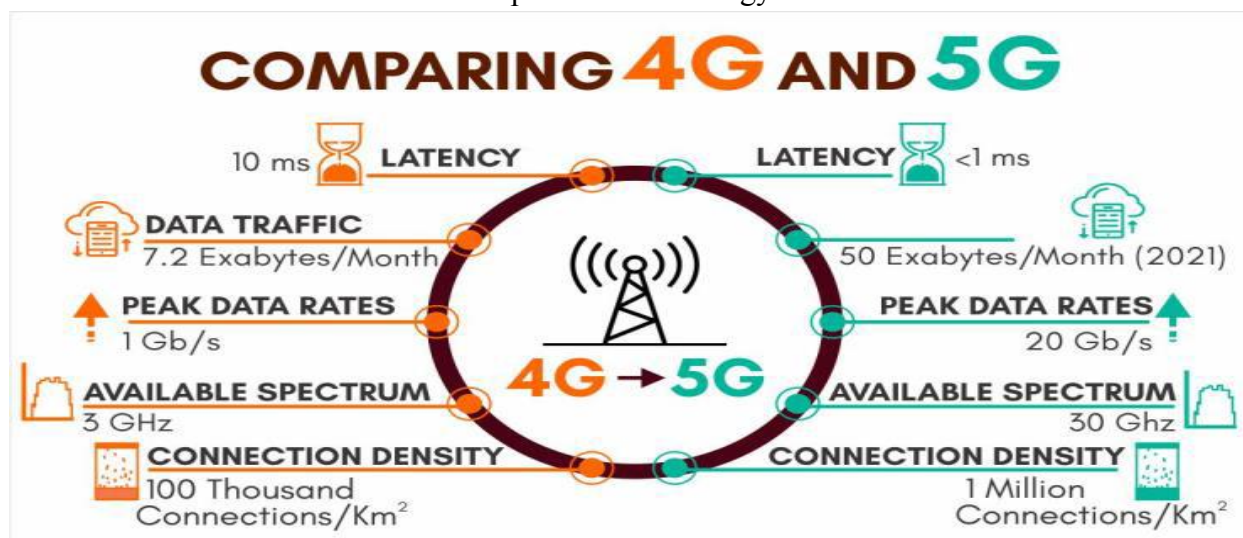
5G

Why in news?

The Steering Committee constituted for identifying the 5G deployment roadmap for India recently submitted report titled 'Making India 5G Ready'.

Background

- Mobile wireless generation generally refers to a change in the nature of the system, speed, technology, frequency, data capacity, latency etc.
- Each generation has certain standards, different capacities, new techniques and new features which differentiate it from the previous technology.



- **First Generation (1G)** mobile wireless communication network was analog and was used for voice calls only. Its basic features were – speed of 2.4kbps, voice calls in one country only, use analog signal, poor voice quality etc.
- **Second Generation (2G)** is a digital technology and supports text messaging. Next to 2G. 2.5G system uses packet switched and circuit switched domain and provide data rate upto 144kbps e.g. GPRS, CDMA etc.
- **Third Generation (3G)** mobile technology provided high data transmission rate, increased capacity and provided multimedia support. The aim of this technology was to provide high speed data and offers data services, access to television/videos, new services like Global Roaming etc. It used Wide Band Wireless Network with which clarity is increased.
- **Fourth Generation (4G)** integrates 3G with fixed internet to support wireless mobile internet which is an evolution to mobile technology and it overcomes the limitations of 3G. Long Term Evolution (LTE) is considered 4G technology.

What is 5G?

- 5G is a wireless communication technology using **radio waves** or radio frequency (RF) energy to transmit and receive data.
- It is the next generation mobile networks technology after 4G LTE networks. 5G technologies will enter services gradually, beginning in 2019 and advance to a full range of services by 2024.
- The final standard for 5G will be set up by the **International Telecommunications Union (ITU)**.
- Technical specification for 5G – o **high data rates** (1 Gbps for hotspots, 100 Mbps download and 50 Mbps upload for wide-area coverage)

massive connectivity (1 million connections per square kilometre)

o **ultra-low latency** (1 millisecond)

o **high reliability** (99.999% for mission critical ‘ultra-reliable’ communications), and

o **Mobility at high speeds** (up to 500 km/h i.e. high-speed trains).

• The technology is still a long way from becoming a reality but it has the potential to completely change the way we interact with wireless devices.

Advantages of 5G

• **Faster Data Speed** – Currently 4G networks are capable of achieving the peak download speed of one gigabit per second. With 5G the speed could be increased upto 10Gbps.

• **Ultra-low latency** – Latency refers to the time it takes for one device to send a packet of data to another device. In 4G the latency rate is around 50 milliseconds but 5G will reduce that to about 1 millisecond.

• **A more Connected World** – 5G will provide the capacity and bandwidth as per the need of the user to accommodate technologies such as **Internet of Things**. Thus, will help to incorporate **Artificial Intelligence** in our lives.

• As per the **OECD (Organization for Economic Cooperation and Development) Committee** on Digital Economic Policy, 5G technologies rollout will help in **increasing GDP**,

creating employment and digitizing the economy.

o The cumulative economic impact of 5G on India can reach one trillion USD by 2035. It will help aid incorporation of **Artificial Intelligence** in our lives and will enable Smart devices to exchange data seamlessly providing the ecosystem for Internet of Things (**IoT**).

o In agriculture, 5G can enable improvement in the entire value-chain, from precision farming, smart irrigation, improved soil and crop monitoring, to livestock management.

o In manufacturing, 5G will enable use of robotics for precision manufacturing, particularly where humans cannot perform these functions safely or accurately.

o In the energy sector, 'smart grids' and 'smart metering' can be efficiently supported. With the rise of renewable and storage technologies, low latency communications will be critical to manage these grids.

o Vehicle platooning can double vehicle density in roads promoting efficient and safer use of the limited road infrastructure.

o In health-care, 5G can enable more effective tele-medicine delivery, tele-control of surgical robotics and wireless monitoring of vital statistics.

Challenges

• **Integration of various standards** – There are already multiple groups working to come up with standards around interoperability, backward compatibility with older technologies etc. Thus, standardization becomes a major challenge faced by 5G.

• **Common Platform** – There is no common architecture for interconnecting various engineering practices. Therefore, a common governing body should develop a common platform for all engineering practices.

• **Building Infrastructure** - It is a huge task, with issues around spectrum and installing new antennas.

• **Obstacles** – Like buildings, trees and even bad weather can cause interruptions which would require more base stations to be built to ensure better connections.

• India lacks a strong backhaul to transition to 5G. Backhaul is a network that connects cells sites to central exchange. As of now 80% of cell sites are connected through microwave backhaul, while under 20% sites are connected through fibre. The former has bandwidth issues as it uses traditional bands while the latter provides low latency and unlimited capacity (a prerequisite for 5G).

• The Indian market is yet to adapt to 4G completely and has not fully evolved to experience an AI revolution.

Key Recommendations

• The committee spells out **three priority areas** for India in 5G :

o Deployment – rolling out early, efficient and pervasive 5G networks

o Technology – building India's industrial and R&D capacity in 5G

o Manufacturing - expanding the manufacturing base in 5G for both semiconductor fabrication as well as assembly & test plants

• **Spectrum Policy:** India's spectrum allocation for public wireless services should be enhanced significantly. Also, the cost of spectrum relative to per capita GDP is high and should come down.

- **Regulatory Policy:** Three expert committees on business, security and safety segments to be created to develop clear guidelines on regulatory policy.

- **Education and Awareness Promotion Program:** The Committee recommends three initiatives
 - o Attract global 5G conference events to India
 - o Set up national 5G events and
 - o Create a comprehensive skills development program.

- **Setting up applications and Use Case Labs:** It can provide multiple functions – interoperability, testing for new applications, fostering innovation, etc. within different economic sectors.

- Participation in International Standards:
- Short term initiatives like setting up ‘Standards Project Teams’ to participate in standards activities.

- Long term initiatives like expert committee should be constituted to recommend a ten year strategy for Information Technology Standards in India.

- **Technology Demonstration and Major Trials:** 5G trials will be an important learning opportunity for our Telecom Service Providers (TSP), academia and industry.

- Create a **5G Program Office within Department of Telecommunications and an Oversight Committee.**

- New civil infrastructure like highways, roads, canals and utilities(gas, electricity, water) lines should be mandated to provision Common Telecom Infrastructure resources such as ducting and power junction boxes to support 5G infrastructure.

- Security audits, a prerequisite for importing of equipment before deploying in Indian networks, needs to be simplified.

DIGITAL PAYMENT

Why in news?

NITI Aayog recently pointed out that the digital payments market in India is set to become a trillion-dollar industry in the next five years, led by growth in mobile payments which are slated to rise to \$190 billion by 2023 from \$10 billion in 2017-18.

About Digital Payment in India

- **The Payment and Settlement Act, 2007 defines Digital Payments/electronic funds transfer** as any transfer of funds which is initiated by a person by way of instruction, authorization or order to a bank to debit or credit an account maintained with that bank through electronic means and includes point of sale transfers; automated teller machine transactions, direct deposits or withdrawal of funds, transfers initiated by telephone, internet and, card payment.

- The payment system can be bifurcated into **two main segments**:
 - o The first segment consists of instruments which are covered under **Systemically Important Financial Market Infrastructure (SIFMIs)** and the second segment consist of **Retail Payments.**

- o **Financial Market Infrastructure (FMI)** is defined as a multilateral system among participating institutions, including the operator of the system, used for the purposes of clearing, settling, or recording payments, securities, derivatives, or other financial transactions. Under this

segment there are four instruments of payments: Real Time Gross Settlement, Collateralized Borrowing and Lending Obligation, Forex Clearing and Government Securities.

o Under the **Retail Payments segment** which has a large user base, there are three broad categories of instruments. They are Paper Clearing, Retail Electronic Clearing and Card Payments which includes Cheque Truncation System, National Electronic Funds Transfer, Unified Payments Interface, Immediate Payment Service etc.

India's payment system - particularly, its digital payments system - has been evolving robustly over the past many years, spurred by developments in information and communication technology.

- Digital payment is a primary tool to move to a 'less cash' economy since the cash to GDP ratio in India is one of the highest in the world at about 12%.

- The **user base for digital transactions in India is currently close to 90 million** and could triple to **300 million by 2020** as new users from rural and semi-urban areas enter the market.

- The year-on-year growth of digital payments in 2017-18 was 44.6% which was nearly double the growth in volume for the period 2011-2016.

- Transactions relating to IMPS, PPI and Debit card had exhibited growth rates in triple digits in the year 2016-17.

Benefits

- Digital payment is **faster, easier, more convenient** than cash transactions.
- It **enables increased levels of financial participation** and inclusion.
- It **promotes more transparency and accountability** and decreases the size of the grey or informal economy.

- It **stores digital record of transactions** which customers can track.

- It helps to keep black money under control and also **increases tax compliance**.

- It **reduces cost of transactions**. No additional cost of printing cash is involved with digital payments. A 0.4% reduction in cost of cash can also boost savings by 4 trillion by 2025.

- Economic growth is increased by increasing the level of spending in the economy due to digital payment.

- It hinders the terror financing network and circulation of counterfeit notes.

Challenges

- **Unbanked population:** about 19 percent of the Indian population is still **outside the banking net** which is a major hurdle to digital payments.

- **Low internet penetration:** Internet penetration in urban India was 64.84% in December 2017 and rural internet penetration was just 20.26%.

- **Low levels of digital literacy:** Approx. 40% population is living below poverty line, illiteracy rate is more than 25-30% and digital literacy is almost no-existent among more than 90% of India's population.

- **Lack of resources:** Small Service providers don't have enough **resources** to invest in electronic payment infrastructure. (e.g. Point-of-sale terminals).

- **Cyber threats:** Cyberattacks can cause personal and commercial data to be lost or compromised causing financial institutions financial loss. Based on estimates, cyberattacks cost the

global economy 1% of annual GDP.

- **Regulatory hurdles:** The majority of the mobile payment service providers are non-compliant with the strict provisions for dealing with sensitive personal data including financial data as mandated by IT Act, 2000 and rules under it. Also IT Act is not comprehensive. India lacks laws to protect consumers if they lose money.

- **Cash dependent economy:** 92% of the Indian economy is made up of informal workers, who contribute around 50% of the GDP; 80-90% of these workers are paid in cash. Mediums like smartphones and internet connectivity are still unaffordable to a sizeable population thus denying them access to digital forms of transaction.

Initiatives taken to promote digital payments:

- **The National Payments Corporation of India (NPCI)** was established in 2008 to spearheading the development of the retail payments system.

- Various important milestones attained in the development of the payments system include the introduction of MICR clearing in the early 1980s, Electronic Clearing Service and Electronic Funds Transfer in the 1990s, issuance of credit and debit cards by banks in the 1990s, the National Financial Switch in 2003 that brought about interconnectivity of ATMs across the country, the RTGS and NEFT in 2004, the Cheque Truncation System (CTS) in 2008, the second factor authentication for the 'card not present' transaction in 2009 and the new RTGS with enhanced features in 2013.

- These measures have been complemented by significant initiatives by the NPCI including the launching of grid-wise operations of CTS, RuPay (a domestic card payment network), Aadhaar Payments Bridge System and Aadhaar Enabled Payment System, National Unified USSD Platform (NUUP), UPI and the BHIM application.

For promotion of the BHIM app, the Government had approved schemes namely 'Referral Bonus scheme for

individuals' and 'Cashback scheme for merchants' for a period of 6 months

- Settlement at half-hourly intervals was introduced in the National Electronic Funds Transfer (NEFT) system.

- **Rationalisation of Merchant Discount Rate** was undertaken to provide a boost to digital payments.

- The digital infrastructure called the "JAM" trinity by interlinking of Jan Dhan, Aadhaar and mobile numbers was a major landmark.

- Furthermore, **non-bank entities have been introduced in the issuance of pre-paid instruments (PPI)**, including mobile and digital wallets.

- Reserve Bank of India has also decided that all system providers shall ensure that the entire **data relating to payment systems operated by them are stored in a system only in India** to ensure better monitoring.

- **DigiShala:** Free Doordarshan DTH educational channel for creating awareness regarding various forms of electronic payment.

- **Vittiya Saksharta Abhiyan** of Ministry of Human Resource Development aims to actively engage the youth/ students of Higher Education Institutions to encourage and motivate all payers and payees to use a digitally enabled cashless economic system for transfer of funds.

• A Committee on Digital Payments was constituted in 2016 under **Ratan Watal** to recommend measures for promotion of Digital Payments Ecosystem in the country.

Way forward

For smooth implementation of cash less system in India, a wide variety of measures are needed by the Government. It will have to bring transparency and efficiency in e-payment system, strategies licensing payment banks, promoting mobile wallets and withdrawing service charge on digital payments, etc.

- **Reducing the digital divide** and increasing the awareness in the rural public.
- **Ease the complexities and enable end-of-day settlement process for the merchants** (As small retailers and merchants need rotation of cashflow in quick turnaround time for their business operations).
- **Reduce the transaction charges** over the digital payments and discourage cash transactions.
- **ICT infrastructure** plays a vital role in successful adaptation of digital payments and hence there is intrinsic need to improve and offer requisite infrastructure for digital payments.
- Emphasis on integrated system of digital payments that can reduce the existing challenges and support in quality outcome (For instance, ensuring more stringent laws for security breach, IT ACT for digital payment transactions etc.)

Recommendations of Ratan Watal Committee • It recommends for **creation an independent payments regulator** within the framework of the Reserve Bank of India (RBI) or give independent status for the RBI's Board for Regulation and Supervision of Payment and Settlement Systems (BPSS) to be called the Payments Regulatory Board (PRB).

- It had also suggested **interoperability between banks and non-bank digital payment gateways/entities** as well as within non-banks.
- Other major suggestions have been creation of a fund for promotion of digital transactions, withdrawal of all charges on digital-based transactions by the government, with special emphasis on low-value transactions (that are mainly financed by cash).
- It had also asked RBI to upgrade the existing real-time gross settlement system (RTGS) and National Electronic Funds Transfer (NEFT) systems so that they operate on a 24/7 basis.
- It also called for mandating government departments and agencies to provide options to consumers to pay digitally as well as incentivize consumers to make payments (including payment of fines and penalties) to the government electronically by giving a discount or cashback.

THERMAL BATTERY

Why in News?

World's first-ever thermal battery plant was inaugurated in Andhra Pradesh.

Thermal Battery

- **Conventional battery technology** is based on the system of charging/discharging cycles that are driven by electricity.

- For example, the Lithium-ion battery, consists of electric charges being transferred from electrodes. Energy is derived from this battery, when lithium atoms turn into lithium ions (Li+), and get stored when this reaction reverses.
- **Thermal batteries**, on the other hand, use thermal energy to operate, i.e., the **energy created by temperature differences**.
- A thermal battery consists of **two parts: a cool zone known as sink, and a hot source called source**.
- Both these sides consist of compounds known as **phase-changing materials (PCMs)**, which can change their state of matter on the basis of a physical/chemical reaction.
- When the sink of a thermal battery receives heat, it transforms physically or chemically, thereby storing energy, while the source cools down.
- During operation, the sink is cooled down, so it releases the stored energy, while the source heats up. Depending on the nature of the battery, the system can derive heat from any source, which makes a thermal battery very versatile.

Benefits of Thermal Battery

- They can help maintaining a low carbon footprint and last longer than the lithium batteries. Lithium batteries currently in use have a heavy carbon footprint and are expensive.
- Its integration with power grids, can help meet industrial demand.
- This could help solve power issues in remote areas.
- It can offer support to public transport systems and telecom grids.
- Telecom infrastructure can also be enhanced, as thermal batteries can help maintain signal strength and network connectivity.
- E-vehicles can also get charging power from stations running on thermal batteries.



SOCIAL

CARE ECONOMY

Why in news?

International Labour Organization (ILO) released report “**Care Work and Care Jobs for the Future of Decent Work**”.

What is care economy?

- The care economy entails the production and consumption of goods and services necessary for the physical, social, mental and emotional well-being of care-dependent groups, such as children, the elderly, the ill and people with disabilities, as well as healthy, prime working-age adults. In 2015, 2.1 billion people children, older persons, people with several disabilities needed care and by 2030 this number will increase by 200 million people.
- Care work consists of two overlapping activities: *direct, personal and relational care*

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activities, such as feeding a baby or nursing an ill partner; and *indirect care activities*, such as cooking and cleaning.

- Unpaid care work is care work provided without a monetary reward by *unpaid carers*. *Paid care work* is performed for pay or profit by care workers such as nurses, teachers, doctors and personal care workers. Domestic workers, who provide both direct and indirect care in households, are also part of the care workforce.

Care economy and Gender inequality

- The majority of the care work worldwide is undertaken by unpaid carers, mostly women and girls from **socially disadvantaged groups**.
- Unpaid care activities constitute a time and energy-consuming occupation that limits women's access to the labour market, relegating them to **low-income** and **insecure employment**.
- Most paid care workers are women, frequently migrants and working in the informal economy under poor conditions and for low pay and it forms important source of employment for women.
- Gender inequalities in unpaid care work are also linked to gender wage gaps. In countries where women shoulder most of the responsibility for unpaid care work, they are less likely to be engaged in paid employment, and those who are active in the labour market are more likely to be limited to part-time or informal employment, and earn less than their male peers.

Why is care work central to overall human development?

- **Reorganization of the care economy to correct the gender imbalances** in unpaid care work is an indispensable component of any policy intervention towards **gender equality**.
- Care economy is a **development policy issue** that also pertains to **poverty reduction, elimination of inequalities by socio-economic status, decent jobs creation and sustainable and inclusive growth**.
- **Children are the workforce of the future**, and investing in high quality and affordable childcare lays the foundation for our future.
- **Care policy coverage deficits impact the most disadvantaged groups** like people with care needs and care responsibilities (especially women), older persons, people living with disabilities, those living with HIV, indigenous peoples, those living in rural areas and those working in non-standard forms of employment or in the informal economy.
- The global prominence of **nuclear families and single-headed households**, higher care dependency ratios, changing care needs and the growth of women's employment in certain countries **increase the demand for care workers**.

Way forward

To avert a global care crisis and meet the Sustainable Development Goals **the policy recommendations and measures are needed to achieve the high road to care work in the form of 5R Framework for Decent Care Work**

Care Economy in India • Women in India do almost 10 times as much unpaid work as men leaving them out of the formal workforce and unable to contribute to the economy.

- Due to the higher share of unpaid care work such as cooking, cleaning, and taking care of children and older members of the family, women’s contribution is left out of GDP.
- Women are responsible for only 17% of India’s GDP (In China-40%)

