

OFFICERS'

Pulse

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Coverage.

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At a Glance & In Depth.

Polity and Social Issues
Economy
International Relations
Environment
Science and Tech
Culture..



CURRENT AFFAIRS WEEKLY

THE **PULSE** OF UPSC AT
YOUR FINGER TIPS.

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News @ a glance

Polity and social issues

Opting out of Aadhar

SC Aadhar verdict:

- SC in the Aadhar verdict upheld the validity of the Aadhar but with certain conditions.
- The Bench struck down section 57 of the Aadhaar Act, which allows private entities to use Aadhaar for verification purposes.
- Section 33(2) that allows UIDAI to share data with specially authorised officers in the interest of national security, was also struck down.
- Aadhaar requirement by CBSE, NEET, and UGC has been struck down, but Aadhaar-PAN linkage has been upheld.
- Seeding Aadhaar with mobile phone numbers and bank accounts is not needed. Schools too, cannot insist on Aadhaar for admission of students.

Government proposal of amendment:

- Government is finalising a proposal to amend the act, following the SC order to uphold it with conditions.
- The amendment seeks to give all citizens an option to withdraw their Aadhaar number, including biometrics and the data.
- It submitted that once a child turns 18, he/she will be given six months to decide if he/she wants to withdraw.
- The proposal, which will now be sent to the Cabinet, is likely to benefit only those who do not have a PAN card or do not require one, as the court had upheld the linkage of PAN with Aadhaar.

Why in news?

- The law ministry felt the option to withdraw from Aadhar must be made available to all citizens in response to SC Aadhar verdict.

India's 1st witness protection scheme

About Witness Protection Scheme,2018:

- Victims and witnesses of serious crimes are particularly at risk when the perpetrator is powerful, influential, or rich.

- Also, witnesses need to have the confidence to come forward to assist law enforcement and prosecutorial authorities.
- The witness will be given protection by the law enforcement agency which will be from simple police protection to even providing temporary residency.

Challenges associated with the scheme:

- Witness protection order is to be granted by a competent authority, so the protection is under the discretion of the authority.
- Funding for witness protection is only from states, while the Law commission recommended that the fund has to be shared by centre and state.
- Expansion of infrastructure like transport facilities, temporary housing has to be done.

Background:

- The issue came up when the Supreme Court was hearing a public interest litigation plea seeking protection for witnesses in rape cases involving self-styled preacher Asaram Bapu.
- The Bench said witnesses feared serious consequences if they deposed against Asaram.

Why in news?

- The Supreme Court of India has directed all the states to implement the draft Witness protection scheme, 2018 immediately across all states.

Permits for Andaman

Different types of permit:

- **Protected Area Permit (PAP)**- The Foreigners (Protected Areas) Order 1958 states that a Protected Area Permit (PAP) is required for non-Indian citizens to visit certain areas in India (mainly in the North-East).
- **Restricted Area Permit(RAP)**- the Foreigners (Restricted Areas) Order 1968 states that a Restricted Area Permit (RAP)

is required for non-Indians to visit certain areas in India. As of 2009, RAP are required for all visits to the Union Territory of the Andaman and Nicobar Islands and parts of the state of Sikkim.

- **Inner Line of Permit(ILP)-** Inner Line Permit (ILP) is an official travel document issued by the Government of India to allow inward travel of an Indian citizen into a protected area for a limited period. It is obligatory for Indian citizens from outside those states to obtain a permit for entering into the protected state.

What is the issue?

- The Centre may think of revisiting its decision to lift the RAP from 29 islands of Andaman and Nicobar after the alleged killing of the US citizen by the Sentinelese tribe.
- The Restricted Area Permit regime was lifted this August from 29 islands, including North Sentinel, to promote tourism.
- Though the regime was withdrawn, a tourist is required to take permission from the Forest Department and the local administration as it is protected under two other permitting Acts.

Why in news?

- The Centre may revisit its decision to lift the Restricted Area Permit (RAP) system from 29 islands of Andaman and Nicobar, after the death of U.S. citizen John Allen Chau

CIC & SIC

About RTI Act, 2005:

- The act enables to seek and get information from government authorities.
- The law also promoted transparency and accountability in public authorities.
- Information requested must be given within 30 days.
- The act is applicable to whole of India except Jammu and Kashmir.
- Bodies applicable under RTI: Constitutional bodies at centre and state (Legislature, Executive, Judiciary), bodies/NGOs owned/financed by government, privatized public utility companies.
- Bodies excluded under RTI : Central Intelligence and Security Agencies, agencies of state specified through notification. The exclusion is not absolute.

- To implement the act Central Information commission and State information Commission were created.

About Central Information Commission (CIC):

- The Chief Information Commissioner and 10 other Information Commissioners are present in CIC.
- CIC hears appeals from information-seekers who have not been satisfied by the public authority, and also addresses major issues concerning the RTI Act.
- CIC submits annual report to Union government, who places this report before each house of Parliament.
- The Chief Information Commissioner and Information Commissioners are appointed by the President on the recommendation of a committee consisting of—
 1. The Prime Minister, who shall be the Chairperson of the committee.
 2. The Leader of Opposition in the Lok Sabha.
 3. A Union Cabinet Minister to be nominated by the Prime Minister.

State Information Commission (SIC):

- The Commission consists of a State Chief Information commissioner and ten State Information Commissioners.
- They are appointed by the Governor on the recommendation of the committee consisting of the Chief Minister as Chairperson, the Leader of the Opposition in the Legislative Assembly and a state Cabinet Minister nominated by the Chief Minister.

Why in news?

- SC remarked that posts of CIC and SIC are vacant and no steps has been taken to fill it.
- The vacancy and delay in appointment has caused pendency of 26,037 RTI cases.

Disabilities Act

Important provisions of Rights of Persons with Disabilities Act, 2016 (RPwD act,2016):

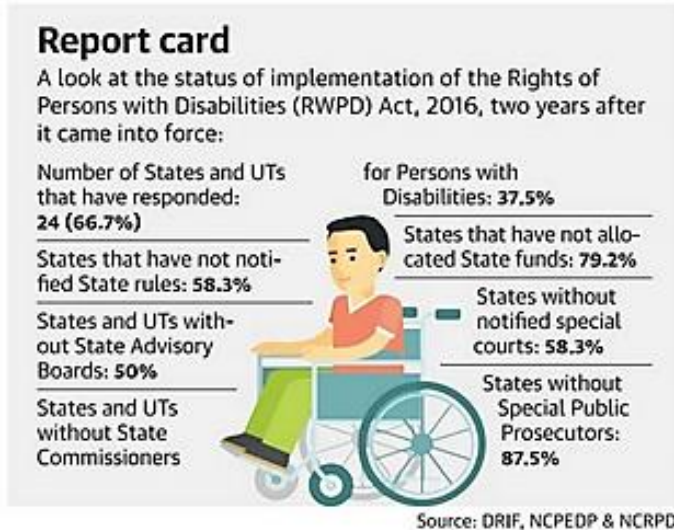
- It brought the Indian law in line with the United National Convention on the Rights of Persons with Disabilities (UNCRPD).
- The types of disabilities have been increased from existing 7 to 21.
- It provides for penalties for offences committed against persons with disabilities and also violation of the provisions of the new law.
- The Union and State governments will ensure that at least 4% of the vacancies in identified establishments have employed

analysed the performance of states in implementation of RPwD act, 2016.

persons or class of persons with at least 40% of any of the disabilities.

- The law mandates stricter punishment for harassing persons with disabilities. Under the new laws, any assault on a disabled girl or woman is considered as “aggravated assault”, which amounts to more punishment.

Report of implementation:



- A study conducted by the Disability Rights India Foundation (DRIF) on the implementation of the Rights of Persons with Disabilities (RPWD) Act, across 24 States, has revealed that more than half have not notified the State rules, despite a significant lapse of time.
- The study, which concentrated on the States’ administrative machinery with respect to the Act, found that 79.2% of the States had not constituted the funds for implementation of the RPWD Act.
- Though 62.5% of the States have appointed Commissioners for Persons with Disabilities the progress has not been substantial.
- Andaman and Nicobar Islands along with Jammu and Kashmir ranked the lowest.
- While 58.3% of the States have not notified Special Courts in the districts for trying offences under the Act, 87.5% have not appointed a Special Public Prosecutors as mandated by the law, the study said.
- An NGO survey of West Bengal found that women with disability were more prone to sexual harassment, 35 out of 100 cases were from disabled women.

Why in news?

- A study was conducted by the Disability Rights India Foundation (DRIF) which

Deaths due to potholes

What is a pothole?

- A pothole is a structural failure in a road surface, usually asphalt pavement, due to water in the underlying soil structure and traffic passing over the affected area.
- Water first weakens the underlying soil; traffic then fatigues and breaks the poorly supported asphalt surface in the affected area.

SC observation:

- The SC expressed concern over increasing death due to pothole, which far exceeds the number of death due to terrorism and border death.
- The SC remarked that 15,000 death in 2017 due to pothole is unacceptable and frightening, asked Centre to consult the states and respond on the action it is going to take to prevent such death.
- It called upon NHAI, state government and municipal authorities on failure to maintain road.
- It also expressed concern that there is no legal provision existing to compensate the victim due to pothole death and to punish the concerned authorities.

Actions taken so far:

- A comprehensive National Road Safety policy has been issued by the centre.
- State and District Road Safety Council has been asked to meet regularly.
- A Certification Course for Road Safety Auditors has been commenced in Indian Academy of Highway Engineers.
- SC on its part constituted a committee headed by SC judge Justice K.S.Radhakrishnan, which recommended guidelines including Road safety fund.

Why in news?

- SC described that 15,000 deaths due to potholes are unacceptable, and called upon Centre to respond on the issue.

Chief Election Commissioner

Appointment of CEC:

- For the conduct of free and fair elections, an independent Election Commission has been provided for in Article 324.

- In India, the Election Commission consists of one Chief Election Commissioner and two other election Commissioners.
- These all are appointed by the President for a term which is fixed by the President.
- The appointment of the chief election commissioner and other election commissioners shall be made by the president, in consultation with Prime Minister and Council of ministers.
- However, conditions of service and tenure of office of the chief election commissioner and other election commissioner are determined by an act of parliament titled The Chief Election Commissioner and Other Election Commissioners (Conditions of Service) Act, 1991.

Removal of CEC:

- The chief election commissioner is provided with the security of tenure.
- He cannot be removed from his office except in same manner and on the same grounds as a judge of the Supreme Court.
- In other words, he can be removed by the president on the basis of a resolution passed to that effect by both the Houses of Parliament with the special majority, either on the ground of proved misbehaviour or incapacity.
- Thus, he does not hold his office till the pleasure of the president, though he is appointed by him.
- Any other election commissioner or a regional commissioner cannot be removed from office except on the recommendation of the chief election commissioner.

Why in news?

- Sunil Arora assumed charge as the 23rd Chief Election Commissioner (CEC) of India succeeding Shri O.P.Rawat on Dec 2, 2018.

NJAC

About NJAC:

- National Judicial Appointments Commission (NJAC) was a proposed body which would have been responsible for the appointment and transfer of judges to the higher judiciary in India.
- The Commission was established by amending the Constitution of India through the ninety-ninth constitution amendment with the Constitution (Ninety-Ninth Amendment) Act, 2014

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- It replaced the collegium system of appointing the judges of Supreme Court and 24 High Courts.
- A new article, Article 124A, (which provides for the composition of the NJAC) was to be inserted into the Constitution.
- The Bill provided for the procedure to be followed by the NJAC for recommending persons for appointment as Chief Justice of India and other Judges of the Supreme Court (SC), and Chief Justice and other Judges of High Courts (HC).

NJAC Members:

- Chief Justice of India (Chairperson, ex officio)
- Two other senior judges of the Supreme Court next to the Chief Justice of India – ex officio
- The Union Minister of Law and Justice, ex-officio
- Two eminent persons (to be nominated by a committee consisting of the Chief Justice of India, Prime Minister of India and the Leader of opposition in the Lok Sabha or where there is no such Leader of Opposition, then, the Leader of single largest Opposition Party in Lok Sabha), provided that of the two eminent persons, one person would be from the Scheduled Castes or Scheduled Tribes or OBC or minority communities or a woman. The eminent persons shall be nominated for a period of three years and shall not be eligible for re-nomination.

SC verdict on NJAC:

- On 16 October 2015, in a 4-1 majority verdict, the Supreme Court held that both the Constitution (Ninety-ninth Amendment) Act, 2014, and the National Judicial Appointments Commission (NJAC) Act, 2014, were unconstitutional as it would undermine the independence of the judiciary.
- The majority said the two laws affect the independence of the judiciary, and judicial appointments, among other things, should be protected from executive control.

Collegium system:

- The Collegium System is a system under which appointments/elevation of judges/lawyers to Supreme Court and transfers of judges of High Courts and Apex Court are decided by a forum of the Chief Justice of India and the four senior-most judges of the Supreme Court.'

- There is no mention of the Collegium either in the original Constitution of India or in successive amendments.
- The Collegium system of appointment of judges was born through “**three judges’ case**” which interpreted constitutional articles on **October 28, 1998**.
- The recommendations of the Collegium are binding on the Central Government; if the Collegium sends the names of the judges/lawyers to the government for the second time.

Why in news:

- A five-judge Bench led by Chief Justice of India has dismissed a review petition against an October 2015 judgment of the Constitution Bench declaring the NJAC unconstitutional.

Reservation for Marathas

Reservation to Marathas:

- The state legislative assembly of Maharashtra on November 29, 2018 passed the Maratha Reservation Bill, approving 16 per cent reservation for the Maratha community in education and job sectors.
- Reservation to the Maratha community will be given under a new category called SEBC (socially and economically backward category).
- The Marathas will get the reservation from an independent quota and it is not expected to affect the reservations given to the Other Backward Class (OBC).

Legality of reservation:

- Article 15 of Constitution of India deals with Prohibition of discrimination on grounds of religion, race, caste, sex or place of birth.
- Reasonable restriction to art 15- State can make any special provision, by law, for the advancement of any socially and educationally backward classes of citizens or for the Scheduled Castes or the Scheduled Tribes.
- Article 16 of Constitution of India deals with Equality of opportunity in matters of public employment.
- Reasonable restriction on Art 16- Residence, backward class of citizens, SC and ST can be given reservation.
- The Supreme Court of India in Indra Swahney case, 1992 ruled that reservations could not exceed 50 per cent.

What is a caveat petition?

- Section 148A of the Civil Procedure Code, 1908.
- A Caveat is a Latin term which means, 'let a person beware'.
- In law, it may be understood as a notice, especially in probate, that certain actions may not be taken without informing the person who gave the notice.
- Caveat petition by Maharashtra government is to ensure not only that the State counsel gets a “fair chance” to defend the proposed Bill, but he is heard even before any interim relief is granted by the courts.

Why in news?

- A petition was filed in Supreme court challenging the reservation given to the Maratha community.
- The Maharashtra government moved swiftly to lodge a caveat claiming a right to be heard first in the matter.

Sex-sorted semen

What is sex sorted semen?

- It is a means of choosing what type of sperm cell is to fertilize the egg cell.
- The technique is used to sort the sperm by separating the X and the Y chromosome separately and then injecting on the female through artificial insemination or in-vitro fertilization (IVF) to produce offspring of the desired sex, in farming animals but also in human medical practice.

Why is it done?

- U.P. govt. decided to reduce the numbers of ‘unproductive’ cattle by curbing their birth.
- The aim of the project was two-fold: to increase the productivity of cows and to decrease the number of unproductive male cattle.
- It will provide a permanent solution to the stray cattle menace in the next 2-4 years.
- This would prevent killing of the stray animals.

Why in news?

- The UP government has approved the “sex sorted scheme” to find alternative to prevent killing of stray bull.

Bhopal gas Tragedy

About Bhopal Gas tragedy:

- On the night of 2 December 1984, a gas leak at the Union Carbide India Limited (UCIL)

pesticide plant in Bhopal led to the deaths of about 4000 people and affected lakhs of people's health adversely.

- UCIL manufactured carbaryl using **methyl isocyanate (MIC)**.
- MIC is highly toxic chemical and extremely dangerous to human health.
- The stillbirth rate went up by 300% and the neonatal mortality rate shot up by 200%.
- There were mass burials and cremations in Bhopal.
- Flora and fauna were also severely affected with large number of animal carcasses being seen in the vicinity.
- The Indian government passed the Bhopal Gas Leak Disaster Act in March 1985 which gave the government the rights to legally represent all victims of the disaster whether in India or elsewhere.

Verdict on the Gas leak:

- Civil and criminal cases were filed in the District Court of Bhopal, India, involving UCC and Warren Anderson, UCC CEO at the time of the disaster.
- In June 2010, seven ex-employees, including the former UCIL chairman, were convicted in Bhopal of causing death by negligence and sentenced to two years imprisonment and a fine of about \$2,000 each, the maximum punishment allowed by Indian law.

Why in news?

- 34th anniversary of Bhopal Gas tragedy was on Dec 3rd 2018, during which the survivors gathered on a rally requesting proper rehabilitation and medical treatment.

Opioid issues in Mizoram

What is opioid?

- Opioids are a class of drugs that include the illegal drug heroin.
- Medically they are primarily used for pain relief, anaesthesia, Diarrhoea.
- India banned opioid drugs in 2013.

Happenings in Mizoram:

- The quantity of heroin seized in Mizoram has increased steadily since 2014 post the drug ban in 2013.
- There have also been reports that liquor sales have not reduced the heroin sale in Mizoram.
- Mizoram close proximity to Myanmar is also a reason for increase in illicit drug trade in the border

Legal provisions to deal with illegal drugs:

- Narcotic Drugs and Psychotropic Substances Act (1985)
- Prevention of Illicit Trafficking in Narcotic Drugs and Psychotropic Substances Act (1985).

Why in news?

- Mizoram Excise and Narcotics Department seized 6 kg of heroin recently as against 3kgs seized in 2013.

High Security Registration plates

What is HSRP (High Security Registration Plate)?

- Features incorporated include the number plate having a patented chromium hologram.
- A laser numbering containing the alpha-numeric identification of both the testing agency and manufacturers.
- A retro-reflective film bearing a verification inscription "India" at a 45-degree inclination.
- The characters are embossed on the plate for better visibility.
- The letters "IND" were printed in a light shade of blue on the observers left side under the hologram.
- However it has yet to be implemented since the various state Governments has not yet appointed an official source for manufacture of these plates, due to disputes which are currently in various Indian courts.
- The HSRP helps in keeping track of the vehicle, and makes it easier to trace a lost or stolen vehicle.

About Central Motor Vehicle Act, 1989:

- The Motor Vehicles Act, 1989 is an Act of the Parliament of India which regulates all aspects of road transport vehicles.
- The Act provides in detail the legislative provisions regarding licensing of drivers/conductors, registration of motor vehicles, control of motor vehicles through permits, special provisions relating to state transport undertakings, traffic regulation, insurance, liability, offences and penalties, etc.

Why in news?

- All new vehicles will be sold pre-fitted with High Security Registration Plates – HSRP from the 1st of April next year.
- The Ministry of Road Transport & Highways has notified amendments in

Central Motor Vehicles Rules, 1989 to this effect.

International Year of Millets

About International Year of Millets:

- Union Minister of Agriculture and Farmers' Welfare has said that the Food and Agriculture Organisation (FAO) Council, currently underway in Rome, approved India's proposal to observe an International Year of Millets in 2023.
- He added that this will enhance global awareness to bring back these nutri-cereals to the plate, for food and nutrition security and hence increase production for resilience to challenges posed globally by climate change.

About UN World Food Programme (WFP):

- Assisting 80 million people in around 80 countries each year, the World Food Programme (WFP) is the leading humanitarian organization fighting hunger worldwide, delivering food assistance in emergencies and working with communities to improve nutrition and build resilience.
- The World Food Programme (WFP) is the food-assistance branch of the United Nations.
- The WFP was formally established in 1963 by the FAO and the United Nations General Assembly on a three-year experimental basis. In 1965, the programme was extended to a continuing basis
- As the international community has committed to end hunger, achieve food security and improved nutrition by 2030, one in nine people worldwide still do not have enough to eat.

What are Millets?

- Millets are a group of highly variable **small-seeded grasses**, widely grown around the world as cereal crops or grains for fodder and human food.
- They are important crops in the **semiarid tropics of Asia and Africa**.
- The crop is favoured due to its **productivity and short growing season under dry, high-temperature conditions**.
- They are highly tolerant of drought and other extreme weather conditions and have a similar nutrient content to other major cereals.

Benefits of Millets consumption

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- Millets are nutritionally superior to wheat and rice owing to their higher levels of protein with more **balanced amino acid profile, crude fibre and minerals such as Iron, Zinc, and Phosphorous**.
- It provides nutritional security and act as **shield against nutritional deficiency, especially among children and women**.
- **Pellagra (niacin deficiency), Anaemia (iron deficiency), B-complex vitamin deficiency** can be effectively tackled with intake of less expensive but nutritionally rich food grains like millets.
- It can also help tackle health challenges such as **obesity, diabetes and lifestyle problems** as they are gluten free and also have low glycaemic index and are high in dietary fibre and antioxidants.

About FAO

- The Food and Agriculture Organization (FAO) is **specialized agency** of the **United Nations** that leads international efforts to defeat hunger.
- **Headquarters: Rome, Italy**
- **Founded: October 1945**
- **Goal of FAO:** Their goal is to achieve food security for all and make sure that people have regular access to enough **high-quality food to lead active, healthy lives**.
- **FAO Council:** It exercises functions dealing with the world food and agriculture situation and related matters, current and prospective activities of the Organization, including its Programme of Work and Budget, administrative matters and financial management of the Organization and constitutional matters.

Why in news?

- FAO approved India's proposal to observe International Year of Millets in 2023 and it also approved India's membership in executive board in UN World Food Programme.

Jal Marg Vikas

About Jal Marg Vikas Project:

- Jal Marg Vikas Project (JMVP) for capacity building of navigation on National Waterway-1 (NW-1) at a cost of Rs 5000 crore.
- The technical assistance and investment support of the World Bank.
- Implemented by Ministry of Shipping.
- The Project is expected to be completed by March, 2023.

Container cargo sector in India:

- India's first container cargo on Inland Vessel on post-Independence India moved from Kolkata to Varanasi on river Ganga (National Waterway-1) on Oct, 2018.
- After the success of container cargo being shipped from Kolkata to Varanasi earlier this year, Kolkata-Patna becomes India's second container cargo sector on Inland Waterways.

Benefits:

- The cargo movement to the east and north eastern states will become easier with the new mode of transportation through waterways.
- The container cargo transport reduces handling cost, allows for easier modal shift, decreases pilferage and damage, besides enabling cargo owners to lessen their carbon footprints.

About NW-1:

- The central government is developing NW-1 (River Ganga) under Jal Marg Vikas Project from Haldia to Varanasi (1,390 km) at about Rs 5,369 crore with the technical and financial assistance from the World Bank.
- The project would enable commercial navigation of vessels with a capacity of 1,500-2,000 Tonnes.
- States: Uttar Pradesh, Bihar, Jharkhand, West Bengal.

Why in news?

- India's second container cargo was inaugurated on 6th Dec 2018.

Liberalised promotion scheme

About the liberalised promotion scheme:

- Ministry of Railways has formulated a liberalized policy for promotion of the sportspersons and coaches to the officer's grade.
- As per which out of turn promotion shall be granted to sportspersons to Officer Grade based on their outstanding sports achievements which inter-alia include representing the country in Olympics on at least two occasions with either at least one medal in Commonwealth Games/Asian Games/Olympics or being the Arjuna/Rajiv Gandhi Khel Ratna Awardees.

About Arjuna Award:

- The Arjuna Awards are given by the Ministry of Youth Affairs and Sports,

Government of India to recognize outstanding achievement in sports.

- Started in 1961, the award carries a cash prize of Rs. 500,000, a bronze statue of Arjuna and a scroll.
- To be eligible for the Award, a sportsperson should not only have had good performance consistently for the previous four years at the international level.

About Rajiv Gandhi Khel Ratna Award:

- It is the highest sporting honour of the Republic of India.
- It is awarded annually by the Ministry of Youth Affairs and Sports.
- The recipients are selected by a committee constituted by the Ministry and is honoured for their "spectacular and most outstanding performance in the field of sports over a period of four years" at international level.
- The award comprises a medallion, a certificate, and a cash prize of Rs. 7.5 lakh.

Why in news?

- Under the new liberalised promotion scheme of Ministry of Railways for sportsperson, Ms. Sakshi Malik, Bronze medallist of Rio Olympics and many other significant sports personalities have been given promotions.

Guidelines for crèches at workplaces

Overview

- A crèches is a place where babies and young children are taken cared for during the working day.
- The government in Maternity **Benefit Amendment Act, 2017** made mandatory for every organization with 50 or more employees to have a crèches.

The Maternity Benefit Act

- The Maternity Benefit Act, 1961, applies to establishments employing 10 or more than 10 persons in factories, mines, plantation, shops etc.
 - The amendment in 2017 made following changes in the act.
1. Increased the paid maternity leave from a period of 12 weeks to 26 weeks.
 2. A woman who has two or more surviving children will be entitled to 12 weeks of which not more than six weeks can precede the date of the expected delivery.
 3. Women who legally adopt a child below the age of three months or a "commissioning mother" will be entitled to maternity

- benefit for 12 weeks from the date on which the child is handed over to her.
4. A commissioning mother is defined as a biological mother who uses her egg to create an embryo implanted in another woman.
 5. It also gives discretion to employers to allow women to work from home.

New guidelines for crèches

- A crèche be either at the workplace or within 500 metres of it.
- The facility should be open for eight to 10 hours and if the employees have a shift system, then the crèche should also be run accordingly.
- A crèches must have a minimum space of 10 to 12 square feet per child.
- The crèches should have guard, supervisor, helper etc.
- A crèches monitoring committee with representations from among crèches workers, parents and administration should be formed.
- There should also be a grievance redressal committee for inquiring into instances of sexual abuse.

Guidelines for Children's hostel

Need

- The major need for drafting new guidelines for children's hostel is due to the exploitation of children, both physically and mentally in the hostels.
- It happens mostly in children homes that are not registered in the juvenile Justice (Care and Protection of Children) Act, 2015.
- Therefore, there is an urgent need for prescribing the minimum standards of care that should be provided to children.

Recent Developments

- Ministry of Women and Child Development has decided to formulate a set of guidelines to ensure adequate safety, minimum standard of living conditions and periodic inspections at hostels.
- The Ministry has directed the National Commission for Protection of Child Rights to draft the guidelines.

Juvenile Justice (Care and Protection of Children) Act, 2015

- The key features of the act are about children in conflict with law and children in need for care and protection.

- The act has established child welfare committee and juvenile justice board and child welfare committee in each district.
- It also establishes central adoption resource agency, which helps in regulation of adopted children.
- It aims at ensuring protection, proper care, development of children

National Commission for Protection of Child Rights (NCPDR)

- The National Commission for Protection of Child Rights is a statutory body set up in 2007 under Commissions for Protection of Child Rights Act, 2005.
- Objective of this commission is to protect, promote and defend the child rights in India.
- It also includes the rights adopted in the United Nations Convention on the Rights of Children, 1989, ratified by India in 1992.

Shahpurkandi Dam

River Ravi

- River Ravi has the source near Rohtang pass in Himachal Pradesh.
- It flows through India-Pakistan boundary.
- It crosses the Dhaola Dhar range and it takes a south-westerly direction and meets the Satluj river at Harike in Punjab.

Why in news?

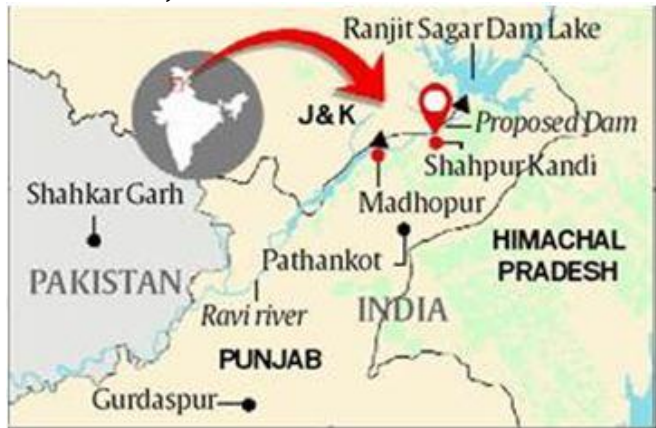
- The Union Cabinet has approved the implementation of Shahpurkandi dam project on the Ravi river in Punjab

The Dam Project

- The project would be implemented by Government of Punjab with Central Assistance and is expected to be completed by 2022
- The major aim is to minimize the water of River Ravi which at present is going waste through the Madhopur Headworks downstream to Pakistan.
- It may give large scale irrigation and hydropower to the surrounding regions.
- A Bilateral agreement was signed between Punjab and J&K in Jan, 1979.
- As per the agreement, construction of Ranjit Sagar Dam (Thein Dam) and Shahpurkandi Dam was to be taken up by Punjab Govt.
- Ranjit Sagar Dam was commissioned in Aug, 2000.

Indus Water Treaty

- Indus Waters Treaty was signed between India and Pakistan in 1960 for sharing of Indus waters.
- According to the Treaty, India got the full rights for utilization of waters of the three Eastern Rivers namely Ravi, Beas and Satluj.



Ideate for India

Innovation for solution

- Ministry of Electronics & IT has launched a National Challenge for Youths, "Ideate for India - Creative Solutions using Technology".
- The main aim of this challenge is to give school students across the country a platform and opportunity to come up with solutions for the problems they see in the society.
- The National Challenge is open to students of classes 6 - 12 all across the country - all 29 States and 7 Union Territories.
- There are 11 core theme areas on which students can share their ideas- healthcare services, education services, digital services, environment, women safety, traffic, infrastructure, agriculture, social welfare, disability and tourism.
- The Challenge has been designed and launched by the National e-Governance Division, Ministry of Electronics & IT in collaboration with Intel India.
- It is mainly supported by Department of School Education and Literacy (DoSE&L) of Ministry of Human Resources Development (HRD).
- This program increases the contribution of youth towards the attaining of Digital India goals.

Digital India

Officers IAS Academy, Chennai

- Digital India is the umbrella programme of various initiatives to make India a digitally empowered society.
- The initiatives under Digital India include all departments and ministries within its scope.
- The Digital India focuses on three vision areas such Digital Infrastructure, Digital Empowerment and Digital Governance.

Nine Pillars of Digital India

1. Broadband Highways
2. Universal Access to Mobile Connectivity
3. Public Internet Access Programme
4. e-Governance: Reforming Government through Technology
5. e-Kranti - Electronic Delivery of Services
6. Information for All
7. Electronics Manufacturing
8. IT for Jobs
9. Early Harvest Programme

Soil Health Card

Need

- With constant deterioration of soil in various parts of the country due to various reasons.
- The major reasons are over use of chemical fertilizers, Improper Irrigation methods etc.
- So, the government introduced Soil health card scheme to help farmers to overcome this issue.

Soil Health Card Scheme

- This scheme provides soil health card to every farmer in the country.
- Central Government provides assistance to State Governments for setting up Soil Testing Laboratories for issuing Soil Health Cards to farmers.
- Under the scheme, State Governments should adopt innovative practices like involvement of agricultural students, NGOs and private sector in soil testing, determining average soil health of villages, etc.,

Soil Health Card

- The Soil health card gives comprehensive information about type of soil, nutrient content, fertilizer required, crop suitability to ambient temperature and rainfall condition.

- The Card would carry crop-wise recommendations of nutrients and fertilizers required for farms in a particular village
- With the issue of the card, the farmers will get a well-monitored report of the soil which is chosen for cultivation of crops.
- The monitoring will be done on a regular basis.
- The farmers will be guided by experts to come up with solutions to improve the quality of the soil.
- GPS enabled soil sampling is done to create a systematic database and allow monitoring of changes in the soil health over the years.

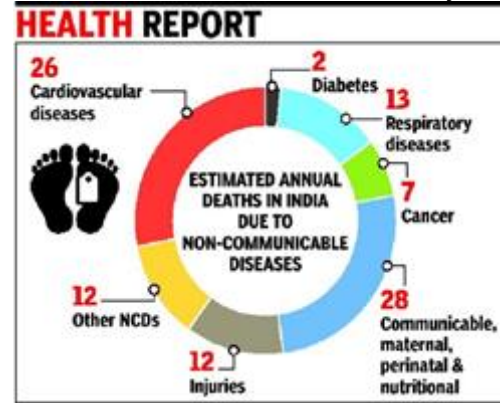
Why in news?

- Soil Health Card Scheme has been taken up for the first time in a comprehensive manner across the country.
- To enable quick soil sample testing and distribution of soil health cards, the soil test infrastructure has been upgraded, 9263 soil testing labs have been sanctioned to States.
- In addition, 1562 village level soil testing projects have been sanctioned to generate employment for rural youth.

Lifestyle diseases

What are lifestyle diseases?

- Lifestyle diseases are those diseases which occur primarily based on the daily habits of people.
- The main factors contributing to lifestyle diseases include bad food habits, physical inactivity, disturbed biological clock etc.,
- Lifestyle diseases include, heart disease, obesity, diseases associated with smoking and alcohol and drug abuse.
- Considerable change in diet pattern and exercise habits is required to overcome this issue.
- Preventive health missions must be adopted to decrease the effects of the diseases.



Recent Developments

- The Global Burden of Disease (GBD) 2016 report that showed that Non-Communicable Diseases are increasing rapidly in the country.
- **India State-Level Disease Burden Initiative**, which is a part of GBD stated that the lifestyle diseases are said to be occurring in almost all states, which poses a great threat to the country.
- There is a great increase in non-communicable diseases where it was 40% of the total disease burden in 1990 which has now increased to 55% in 2016.

National Programme

- WHO has developed a comprehensive Global Monitoring Framework and Action Plan for prevention and Control of NCDs.
- India is the first country globally to adopt it in its national strategy. Such as:
 1. National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke
 2. National Programme of Health Care of elderly
 3. National Iodine Deficiency Disorders Control programme
 4. National Programme for Control of Blindness
 5. National Mental Health Programme
 6. National Programme for Prevention and Control of Deafness

Global Burden of Disease (GBD) report

- The Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) is the single largest and most detailed scientific effort ever conducted to quantify levels and trends in health.
- It is done by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington with the help of other organisations.

India State-Level Disease Burden Initiative.

Why in news?

- Medical fraternity should launch nationwide awareness campaign on health hazards posed by modern lifestyle says the Vice President.

- In order to improve health programs and planning in India, The Institute for Health Metrics and Evaluation (IHME) is partnering with the Indian Council of Medical Research (ICMR) and the Public Health Foundation of India (PHFI) to create

Economy

Norms for payment app

Why in news?

- The Ministry of Electronics and Information Technology (MeitY) has proposed that the Reserve Bank of India (RBI) come up with regulations to oversee collection, usage and sharing of data by payment service providers, even as the government is expediting discussions on the draft Personal Data Protection Bill.

About the issue:

- National Cyber Security Coordinator (NCSC)** raised concerns over collection and storage of “sensitive personal data” by payment service providers via applications such as Google Tez, WhatsApp and Paytm.
- NCSC recommended that there was a need to scrutinise all aspects of a relation – legal, technical and financial, between all the stakeholders in the payments ecosystem and **“Payments service providers must comply with legal framework as well as regulations prescribed by the regulator”**.
- MeitY supports NCSC’s recommendation and has suggested that RBI should lay down regulations, that would bind the collection, usage and sharing of data, by participants in the payments arena.
- In April 2018 the RBI directed all payments service providers to ensure that the data relating to payment systems operated by them were stored only in India.

The Personal Data Protection Bill, 2018:

- The draft personal data protection Bill 2018 was submitted by the **Justice B.N. Srikrishna** headed expert panel.
- The proposed Data Protection Bill 2018 essentially makes individual consent central to data sharing. The report notes that the right to privacy is a fundamental right. Unless you have given your explicit consent, your personal data cannot be shared or processed. Of course, this also

means that the onus lies on you to make an informed choice.

- The draft bill also states that any person processing your personal data is obligated to do so in a fair and reasonable manner. In other words, your data should be processed only for the purposes it was intended for in the first place.
- Failing to meet these provisions can cost companies dear, with the bill laying down penalties that can go up to ₹15 crore or 4% of a company’s total worldwide turnover.

KEY RECOMMENDATIONS

- Personal data shall be processed only for purposes that are clear, specific and lawful
- Individuals will have the right to withdraw consent
- All firms and agencies will have to appoint data protection officers
- Firms will have to ensure at least one copy of personal data to be stored in India
- They will also act as point of contact for the individuals for raising grievances
- ‘Critical’ personal data shall only be processed in a server or data centre located in India
- Exemptions have been provided for processing of personal data for journalistic purpose, or for a purely personal or domestic purpose
- Penalties range from 2-4% of a company’s worldwide turnover, or fines between ₹5 crore and ₹15 crore, whichever is higher
- The Centre shall notify Data Protection Authority of India
- A data protection fund and a data protection awareness fund to be set up through proceeds from the penalties and the fines

Existing Acts such as Right to Information, Aadhaar and Information Technology will have to be amended

Hassle free Visa regime

Why in news?

- The Union Home Secretary Shri Rajiv Gauba has said that creating a simple and hassle free Visa regime is the government’s objective to facilitate arrival and stay of foreign travellers into the country.

Why such a move?

- A friendly Visa regime is also a part of 'Ease of doing Business' at the same time, security should also be strengthened, using technological tools.
- **e-FRRO** module which provides 27 Visa related services to foreigner and it has been very successful and has obviated the need for foreigners to visit FRRO Offices for extending their stay, change of Visa status.
- **e-Visa** facility now covers 166 countries and foreigners can obtain online Visa within 72 hours for travel related to Tourism, Business, Health, Medical Attendant and Conference purposes.
- Visa liberalization measures are relaxation introduced in grant of Internship Visa which can be obtained by a student while still pursuing a course in the country without remuneration, Extension of Business Visa beyond five years, Conversion of Visa into medical category in an emergency for a foreigner who is already in the country and Permission for foreigners who are on long duration Visas to attend conferences.

Additional info:

- **Henley Passport Index** is a ranking of all the passports of the world according to the number of countries their holders can travel to visa-free.
- Japan is the most powerful passport access to 190 nations.
- India stood at 86.
- **Ordinary passport** (dark blue cover) is issued to ordinary citizens for ordinary travel, such as for vacation, study and business and it is "Type P" passport (P-Personal).
- **Official passport** (white cover) is issued to individuals representing the Indian government on official business. It is a "Type S" passport, S standing for service.
- **Diplomatic passport** (maroon cover) is issued to Indian diplomats, top ranking government officials and diplomatic couriers. It is a "Type D" passport with D standing for diplomatic.

Local currency trade between India & China

What's in the news?

- China has not accepted India's proposal to carry out bilateral trade in local currencies (renminbi-rupee).
- In local currencies trade, countries trade using their domestic currencies without completely depending on a third currency (usually US Dollar).

Why it is important for India?

- India's proposal was aimed at boosting its exports and bridging the widening trade deficit with china.
- India's exports to China stood at only \$13.4 billion, imports aggregated to \$76.4 billion in 2017-18, leaving a trade deficit of \$63 billion. It was \$51.11 billion in 2016-17.
- India has also proposed trade in national currencies with some other countries, including Russia, Iran and Venezuela. India has trade deficit with these three countries, too.

Rupee-Rial mechanism

- Currently, India has a similar agreement with Iran known as '**rupee-rial mechanism**', under which Iran could use some of its revenue from oil trade with India to procure India goods.

PMI

What is PMI?

- It is an economic indicator which indicates the business activity, & economic health of the manufacturing and service sectors.
- PMI of India is published by Japanese firm Nikkei but compiled and constructed by Markit Economics.
- Unlike the Index of Industrial Production (IIP) which indicates the changes in production volume or output, the PMI is an investor sentiment tracking index and is more dynamic in nature.

How is it calculated?

- They are derived from monthly surveys of about 400 private sector companies.
- Variables used for calculating the PMI are: Output, New Orders, Employment, Input Costs, Output Prices, Backlogs of Work, Export Orders, Quantity of Purchases, Suppliers' Delivery Times, Stocks of Purchases and Stocks of Finished Goods.

How to read PMI?

- While PMI >50 implies expansion of business and economic activity, PMI <50 implies contraction.

Why in news?

- According to the latest PMI data, manufacturing activity expanded in November and registered a reading of 54, up from 53.1 in October.
- It is the highest in 11 months, as new order flows encouraged companies to lift production amid strong demand conditions.

PM-AASHA

About PM-AASHA

- In Sept 2018, the government launched the new crop procurement policy- Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA) to ensure that farmers growing oilseeds, pulses and copra actually get the MSP they are promised for their crops every year.
- The new scheme is envisaged to be a mix of sub-schemes, which will involve direct procurement from farmers (**price support scheme** or PSS), paying them for losses incurred when wholesale market prices are lower than announced MSPs (**price deficiency payment scheme** or PDP), and procurement by **private traders** at MSP as a pilot.
- Direct procurement or PSS scheme will kick in when prices of pulses, oilseeds and copra fall below MSP, up to a maximum limit of 25% of the total harvest.
- The PDP scheme, which has been framed on the lines of Madhya Pradesh government's Bhavantar Bhugtan Yojana, will be available only for oilseeds with registered farmers directly receiving payments in their bank accounts when they sell at prices lower than MSP. The government will not undertake physical procurement of crops under this scheme.

Why in News?

- Govt. guarantee of Rs 18,250 Cr has been made available for smooth conduct of PSS operations for the years 2018-20.

Open Market Operations

What are Open Market Operations (OMOs)?

- Open Market Operations are conducted by the RBI which involve sale or purchase of **G-Secs** to or from the market. The objective is to control the money supply conditions.
- If there is excess money supply (i.e. excess liquidity) in the market, the RBI resorts to sale of securities which reduces the volume

Officers IAS Academy, Chennai of money. Similarly, when the liquidity conditions are tight, it buys securities from the market, thereby releasing money into the market.

What are Government Securities (G-Secs)?

- G-Secs are tradable instruments like bonds issued by the Central Government or the State Governments with a promise of repayment upon maturity.
- The Central Government can issue both treasury bills and bonds while the State Governments can issue **only bonds**, which are called the State Development Loans (SDLs).
- These securities are considered low-risk, since they involve the government and hence, are called **risk-free gilt-edged instruments**.

Why in News?

- The RBI is planning to inject Rs 10,000 crore into the system through purchase of government securities through OMOs to increase liquidity.

Easing global trade

About WCO

- The World Customs Organization (WCO), established in 1952 as the Customs Co-operation Council (CCC) is an independent intergovernmental body.
- Its mission is to enhance the effectiveness and efficiency of Customs administrations and to secure and facilitate international trade.
- Today, the WCO represents 182 Customs administrations across the globe that collectively process approximately 98% of world trade.

Why in news?

- The 80th Session of Policy Commission of WCO was held in Mumbai.
- The event was organized by the WCO and hosted by the Central Board of Indirect Taxes and Customs (CBIC), India.

Need for free global trade

- Union Finance and Corporate Affairs Minister Arun Jaitley made a strong pitch for free global trade, stressing it was in the larger interests of consumers around the world, and enabled them to get the best products and services at a competitive cost.
- The Minister's remarks assume significance at a time when protectionist tendencies in the developed world have

triggered trade wars and built barriers to free movement of goods and services.

What is a Protectionist Tendency?

- It is the economic policy of restricting imports from other countries through methods such as tariffs on imported goods, import quotas, and a variety of other government regulations thereby limiting unfair competition from foreign industries.

RBI – the lender of last resort

Background

- NBFCs started facing liquidity crunch since August after IL&FS, a leading NBFC, started defaulting on loans. The loan defaults of the IL&FS, has led to widespread panic over risks in the entire non-banking financial sector.
- It has raised the rates at which NBFC borrowed by 30-40 basis points. (100 bps= 1 percent) and created a **liquidity shortage** across the NBFC system of close to Rs 1 lakh crore.
- (*liquidity shortage - situation where a business entity is unable to gather enough cash to meet its payment obligations to lenders*)
- Following this, the RBI has taken various measures like Open Market Operations (OMO) to ease the liquidity conditions.

Why in News?

- RBI Deputy Governor Viral Acharya assured that the central bank was ready to stand as the **lender of last resort** in the context of liquidity needs of the non-banking finance sector.
- At the same time, Mr. Acharya said the measures over the last two months have eased liquidity for NBFCs and the present situation did not warrant any drastic steps given the health of the Indian economy.

Outlook for banks - Moody's

What's in the news?

- Moody's Investors Service, a rating agency, has released its annual banking system outlook for India.
- The outlook for the banking system in India over the next 12-18 months is stable as economic growth prospects remain healthy.

What are the parameters?

- The stable outlook is based on Moody's assessment of six drivers — operating environment, asset quality, capital, funding

Officers IAS Academy, Chennai and liquidity, profitability and efficiency, and government support.

More on news

- The agency expects the real gross domestic product (GDP) in India to grow 7.2 per cent in the year ending March 2019 and 7.4 per cent in the following year, driven by investment growth and strong consumption.
- However, liquidity constraints among NBFCs (which was aggravated by IL&FS default) will prove a drag on growth as NBFCs are increasingly important providers of credit for the economy.
- On asset quality, Moody's said it will remain stable but weak, as Banks have recognised the bulk of NPAs and would start making recoveries. The degree of success in resolution of large NPAs will determine the extent of asset quality improvements.
- Capitalisation at public sector banks would remain weak but that government support would provide relief.
- Profitability of the lenders will improve but remain weak due to high credit costs.

Fitch retains negative outlook for banks on weak capital

- Another rating agency- Fitch- has maintained a negative outlook for Indian banks due to weak capitalisation and poor profitability.
- Fitch estimated that state run banks would need \$38 billion by FY19 to sufficiently meet minimum Basel III capital standards, and achieve 65% cover for non-performing assets, and to leave some surplus capital for growth.
- The agency expects the NPA problem to peak in 2019, but the size and complexity of the banking sector's \$140 billion NPA stock will take time to resolve.

Basel III norms

- Basel III is the latest of comprehensive set of reform measures, developed by the **Basel Committee on Banking Supervision**, to strengthen the regulation, supervision and risk management of the banking sector. These measures aim to improve the banking sector's ability to absorb shocks arising from financial and economic stress.
- Basel norms III stipulate banks to maintain minimum capital ratio requirement of **8%**

to ensure that they are protected against unexpected losses.

Widening of Current account deficit

What is CAD?

- Current account is the difference between the value of exports of goods and services and the value of imports of goods and services. The current account also includes **net income** (such as interest and dividends) and **transfers** from abroad (such as foreign aid), which are usually a small fraction of the total.
- A current account deficit means the country is importing more goods and services than it is exporting.

Why in News?

- According to the latest RBI data, CAD widened to 2.9% of GDP (\$19.1 billion) for the second quarter (July-September) compared with 1.1% (\$6.9 billion) during the same period of the previous year.

Reasons for the widening CAD

- Rising trade deficit which is now at \$50 billion compared with \$32.5 billion a year ago.
- Sharp rise in oil prices. Being a major oil importer, rising oil prices meant more foreign exchange leaving the country.

Is it a cause for concern?

- Some of the pressure has eased with oil prices falling since October and the rupee strengthening against the dollar.
- So, there are possibilities that CAD will come down in the next quarter.

Doubling agri exports

What's in the news?

- In order to provide an impetus to agricultural exports, the Union Cabinet has approved the **Agriculture Export Policy 2018**.
- The cabinet has also approved the proposal to establish a central monitoring framework with commerce ministry as the nodal department, having representation from other ministries, departments and agencies as well as concerned state governments to oversee the policy implementation.
- To operationalise the policy, the govt would focus on creating agri clusters, promote value added shipments, attract

private investment and infrastructure development.

Key objectives

- To **double agricultural exports** from present US\$ 30 Billion to US\$ 60 Billion by 2022 and reach US\$ 100 Billion in the next few years thereafter, with a stable trade policy regime.
- To **diversify** exports by products and destination with focus on high value-added farm produce and perishables. At present, rice, wheat and marine products account for about 52% of the total farm exports.
- To promote novel, indigenous, organic, ethnic, traditional and non-traditional Agri products exports.
- To provide an **institutional mechanism** for pursuing market access, tackling barriers and deal with sanitary and phytosanitary issues.
- To strive to **double India's share** in world agri exports by integrating with global value chain at the earliest.
- To set up **specialised clusters** in different states for different produce to push exports.
- The policy also envisages to remove all restrictions on export of organic and processed foods, paving way for the growth of the sector. For other agriculture products, govt will remove the restrictions depending on the situation.

Demonetisation and direct tax collection

What's in the news?

- Central Board of Direct Taxes Chairman Sushil Chandra said that Demonetisation was beneficial in terms of increasing the tax base as well as increasing direct tax collections.
- Noting that the gross direct tax collections rose 16.5% during the first half of the current fiscal, he said demonetisation has helped in widening the tax base (*bringing more people within the tax net*), increasing the tax revenue, and also in deepening the tax base.
- Deepening of tax base means that people who filed returns of Rs 10 lakh about two years ago, are now reporting more now, and even the people filing returns of more than Rs 1 crore are filing much more this year.

- He added that the government expects to exceed the budgeted target for direct tax collections during the current financial year (Rs 11.5 lakh crore).

Northeast & Bamboo cultivation

What's in the news?

- Addressing the meeting of NITI Aayog Forum for Northeast, Union Minister of State Development of North Eastern Region (DoNER) Jitendra Singh said the Northeast should focus on the bamboo industry in a big way, as this is a sector which has not received attention in spite of the fact that over 60 per cent of the country's bamboo is grown here.
- He said the priority should be the marketing of high-value products like bamboo shoots, candy, and bamboo charcoal fibre in the fashion industry.
- In addition, big industries dealing in fibre, construction material, bamboo engineered wood, etc. are the potential areas which can be envisaged for further expansion, he said.

Govt's initiatives to spur Bamboo industry

- **National Bamboo Mission (NBM)**- a Centrally Sponsored Scheme started in 2006-07. It was subsumed under Mission for Integrated Development of Horticulture (MIDH). It aims to promote growth of bamboo sector through area based regionally differentiated strategy.
- In April 2018, the govt launched restructured National Bamboo Mission with an outlay of Rs. 1290 crore. The restructured mission aims to ensure holistic development of bamboo sector by addressing value chain and establish effective linkage of producers with industry.
- In 2017, Parliament passed the **Indian Forest (Amendment) Bill** which exempted bamboo grown in non-forest areas from the requirement of felling and transit permit for its economic use.

NITI Forum for North East

- It was constituted in February 2018 with an aim to ensure sustainable economic growth of North Eastern Region (NER) and periodically review the development status in NER.
- The forum is co-chaired by Vice-Chairman of NITI Aayog and Minister of DoNER. It includes representation from all NER States, their Chief Secretaries and

Officers IAS Academy, Chennai Secretaries of relevant Central Ministries and Departments, Directors of reputed institutions, experts and journalists are included as members.

- The forum is tasked to identify various constraints on way of accelerated, inclusive and sustainable economic growth in NER of country. It will recommend suitable interventions for addressing identified constraints. It will also review development status in the NER.

IBC

Insolvency and Bankruptcy Code (IBC)

- The Code creates time-bound processes for insolvency resolution of companies and individuals. These processes will be completed within **180 days**. If insolvency cannot be resolved, the assets of the borrowers may be sold to repay creditors.
- The resolution processes will be conducted by licensed insolvency professionals (IPs). These IPs will be members of insolvency professional agencies (IPAs).
- **Information utilities (IUs)** will be established to collect, collate and disseminate financial information to facilitate insolvency resolution.
- The **National Company Law Tribunal (NCLT)** will adjudicate insolvency resolution for companies. The **Debt Recovery Tribunal (DRT)** will adjudicate insolvency resolution for individuals.
- The Insolvency and Bankruptcy Board of India (IBBI) will be set up to regulate functioning of IPs, IPAs and IUs.
- The Code was amended in 2017 to prohibit (i) wilful defaulters, (ii) promoters or management of the company if it has an outstanding non-performing debt for over a year, and (iii) disqualified directors, among others-- from submitting a resolution plan in case of defaults.
- It was again amended in August 2018
 1. To allow home buyers to be treated as financial creditors like banks and financial institutions, so that they can take recourse to the protection conferred under the code
 2. The voting threshold for routine decisions taken by the committee of creditors reduced from 75% to 51%. For certain key decisions like approval of a resolution plan this threshold has been reduced to 66%.
 3. The amendment also provided relief to MSME sector by allowing the promoter of

an MSME to bid for his enterprise undergoing Insolvency Resolution Process provided he is not a wilful defaulter and does not attract other disqualifications not related to default.

Why in News?

- The Federation of Indian Chambers of Commerce and Industry (FICCI) in partnership with the IBBI and the Consulate General of India in New York has organised 'Conference on Insolvency and Bankruptcy Code- a New Paradigm for Stressed Assets'.
- Addressing the conference, Finance Minister Arun Jaitley said that landmark reforms such as the IBC offer an attractive and conducive environment to foreign investors to the country.
- Mr. Jaitley also acknowledged that because of appeals and counter-appeals and litigations the insolvency process is being delayed.

Changing the calculation of GDP

About CSO

- The Central Statistics Office, under the Ministry of Statistics and Programme Implementation is responsible for coordination of statistical activities in India, and evolving and maintaining statistical standards.
- Its activities include National Income Accounting, conduct of Annual Survey of Industries, Economic Censuses, compilation of Index of Industrial Production, as well as Consumer Price Indices for Urban Non-Manual Employees, Human Development Statistics, Gender Statistics, etc.

What happened in 2015?

- In 2015, the government adopted a new method for the calculation of the GDP of the country.

What were the changes made?

- Shift to the **new base year** 2011-12 from 2004-05
- As per the new methodology, Central Statistics Office (CSO) calculates GDP by adding product taxes to the **GVA at basic prices** and removing product subsidies
- In addition to data from Index of Industrial Production (IIP) and Annual Survey of Industries (ASI) CSO started using data from **MCA-21** (an e-governance initiative of the Ministry of Company Affairs which

Officers IAS Academy, Chennai allows firms to electronically file their financial results)

GDP back series data

- In November 2018, the government released the GDP growth estimates for previous years based on the new method of calculation and base year it had adopted in 2015. The new data and the manner in which it was released led to criticism from various quarters.

What does the new data say?

- The new data release shows that GDP growth during the UPA regime averaged 6.7% during both UPA-I and UPA-II, compared with the 8.1% and 7.46%, respectively, estimated using the older method. In comparison, the current government has witnessed an average GDP growth rate of 7.35% during the first four years of its term, based on the new method.
- The new data shows that, contrary to the earlier perception, the Indian economy never graduated to a 'high growth' phase of more than 9% in the last decade or so.
- Experts also pointed out that the newer data, especially for the mining and manufacturing sectors, shows that India did not recover from the global financial crisis as quickly as initially thought.

What are the problems with the new data?

- The new back series data diverges quite sharply from the estimates made in a draft report released by the National Statistical Commission earlier this year, which showed that growth during the UPA regime, crossed 9% on at least four occasions, and even hit 10.78% in 2010-11.
- The government, however, said that the data was just a draft report that used only one of the many methods on offer to estimate the back series, and that it was not the final number.
- Former Chief Statistician of India Pronab Sen pointed out that the fact that the data was released by Niti Aayog, though it was prepared exclusively by the CSO, has led to questions over the credibility of the data.

Why in News?

- Finance Commission Chairman N.K. Singh has said that the Central Statistics Office is a respected and credible organisation and its value and credibility should not be marred in any way.

Jobless growth

What is 'Jobless growth'?

- Jobless growth is a phenomenon in which an economy is growing considerably in absolute terms, however a major portion of the people in the economy are jobless.

Why in News?

- Terming the criticism of jobless growth during the present government as

Officers IAS Academy, Chennai spurious, Niti Aayog Vice-Chairman Rajiv Kumar has said that 70 lakh jobs were created in the financial year 2017-18 alone.

- Mr. Kumar said that growth in sales of transport vehicles, huge disbursement of Mudra loans and Employees' Provident Fund Organisation (EPFO) data show that enough opportunities for employment and self-employment were created over the past four years.

International Relations

Republic Day guest

India-South Africa relations

- India and South Africa has friendship since Mahatma Gandhi started his Satyagraha movement in South Africa.
- The **Comprehensive Strategic Partnership** between these two nations was established through the **Red Fort Declaration** (March 1997) and reaffirmed in the **Tshwane Declaration** (October 2006).
- The two countries had signed Memorandum of Understanding on ICT Establishment of Grassroots Innovation in the area of Science and Technology Tourism and Programme of Cultural Cooperation.
- Apart from the cultural exchange program, a 'Shared Histories' Festival organised as a public-private partnership is also held.
- BRICS organisation plays a major role in increasing the ties between India and South Africa.

Red Fort Declaration

- The Declaration, signed on March 1997, reaffirmed ties between India and the first democratic government in South Africa.
- The Declaration was signed by the then South African President Nelson Mandela and former Prime minister of India HD Deve Gowda at the Red Fort in Delhi.

Tshwane Declaration

- The Tshwane Declaration on Reaffirming the Strategic Partnership between South Africa and India was signed on 02 October 2006.
- President Thabo Mbeki and Prime Minister Manmohan Singh signed the declaration at Pretoria in South Africa.

- The declaration deals about action against terrorism, cooperation in defence, agriculture, health sector etc.

BRICS

- It is an acronym for the countries Brazil, Russia, India, China and South Africa, a group of five major emerging economies.
- BRICS is a multi-level process where heads across various levels meet among the BRICS nations to foster better cooperation and mutual benefit.
- All BRICS nations are member of G20
- They account for 26.46% of world land area
- BRICS countries represent 42.58% of the world population

Why in news?

- Prime Minister Narendra Modi invited South African President Cyril Ramaphosa during the G20 summit to be the chief guest at Republic Day celebrations next year.

Changes to H1-B

What is a H1-B visa?

- A citizen of a foreign country who wishes to enter the United States must first obtain a visa, **either a non-immigrant visa for temporary stay, or an immigrant visa for permanent residence.**
- The H-1B visa is a **non-immigrant visa** that allows US companies to employ graduate level workers from other countries in occupations that require theoretical or technical expertise in specialized fields for a certain period of time.
- The duration of H1B visa is said to be about 6 years.

Problems in Past

- According to a report by the New York Times, 70% of H1 B visas were granted to Indians.

- Family members (spouse and children below 12 years of age) of the H-1B worker are admitted to US under H-4 Category. H-4 family members could undertake studies, have bank account and driver's license **but could not engage in any form of employment**, known as 'Prisoner Visa'.
- According to the new rules, the US Citizenship and Immigration Services (USCIS) will not consider computer programmer under the 'specialty occupation', which is a mandatory category for people to apply.
- The recent developments have led to decrease in the Indian IT growth in business and lowered the foreign exchange earnings impacting the Current account deficit, hitting the demand across the allied sector, as US accounts for 60% of all technology exports from India.

New Proposal

- The US government proposed a draft to make persons with advanced degree from US universities have high probability over the regular H1-B applicants.
- With the lottery system for selecting the applicants, the persons with advanced degree will be selected first (20,000) and then the unselected applicants later.
- Due to this the persons with advanced degree will have greater opportunity than the other applicants.
- With only 85,000 visas issued per year, this will a great impact among Indian-born workers who are about 74% of H1B petition in 2018.

G-20 summit, 2018

About

- It is an international forum for economic cooperation and decision-making for governments and central bank governors from 20 major economies.
- It comprises of total 19 countries plus European Union (EU), representing 85% of global GDP, 80% of international trade, 65% of world's population.
- Its members include Australia, Argentina, Brazil, Canada, China, India, France, Germany, Indonesia, Italy, Japan, South Korea, Mexico, Saudi Arabia, Russia, Turkey, South Africa, UK, US and EU.
- The G20 does not have permanent offices or employees.

- In 2008, the first G20 Leaders' Summit was held in Washington DC, US.

Latest summit

- The **2018 G20 Buenos Aires summit (Argentina)**, was the thirteenth meeting of G20
- It was the first G20 summit to be hosted in South America.
- The theme of the summit is "**building consensus for fair and sustainable development**"

Various Developments in Summit

9-point agenda

- India presented a nine-point agenda to G20 member nations calling for strong and active cooperation among them to comprehensively deal with fugitive economic offenders.
- India also called for joint efforts by G-20 countries to form a mechanism that denies entry and safe havens to fugitive economic offenders.
- It suggested the Financial Action Task Force (FATF) should help in comprehensive exchange of information between financial intelligence units
- It also asked FATF to formulate a standard definition of fugitive economic offenders.
- FATF should also develop a set of commonly agreed and standardized procedures related to identification, extradition and judicial proceedings for dealing with fugitive economic offenders.
- It also asked other countries to help in locating the properties of the fugitive economic offenders in their respective region.

Countering Terrorism

- Prime Minister Narendra Modi urged G-20 countries to implement 11-point agenda of Hamburg declaration which demands firm action against terrorism in 13th G20 summit.
 - The agenda was presented by Prime Minister Narendra Modi in 12th G20 meeting Conducted IN Hamburg, Germany. Some of the points on agenda are
1. G-20 countries must form National Security Advisors on Counter Terrorism.
 2. Concrete support among G-20 countries for Cyber Security to stop terror activities.
 3. Adaptation of Comprehensive Convention on International Terrorism.

4. Exchange of best practices and process of de-radicalisation of terrorism through G-20 countries.
5. Closure of terror funding with the help of Financial Action Task Force.

Fugitive economic offenders Act, 2018

- The Act defines the fugitive economic offender “as an individual who has committed a scheduled offence or offences involving an amount of Rs.100 crore or more and has absconded from India or refused to come back to India to avoid facing criminal prosecution in India.”
- The new law allows designated special court to declare a person as fugitive economic offender and to confiscate his property, including ‘benami’ ones.
- The Enforcement Directorate (ED) will be the investigative agency under the Act.

Financial Action Task Force (FATF)

- Financial Action Task Force (FATF), an inter-governmental policy-making body aiming at establishing international standards for combating money laundering, terror financing and other threats to the global financial system.
- It comprises over 39 member countries. India is also a member of the Financial Action Task Force.
- The FATF Secretariat is housed at headquarters of OECD in Paris, France.

JAI-Trilateral Meeting

- A meeting was convened among the three leaders of Japan, India and USA.
- The main discussion during the meeting was about the taking forward the concept of Indo-pacific.
- Plans were discussed for ensuring stability, prosperity and security in the Indo-Pacific region.
- Japan, India and USA are also engaged in Quadrilateral Security Dialogue (initiated in 2007 and re-established in 2017).
- Such dialogues are important in providing a counterbalance to tensions created in South China by specially China.
- Prime Minister Narendra Modi embarked this meeting as JAI dialogue (Japan, America, and India).

India-China Relations

- PM Narendra Modi and Chinese president Xi Jinping, who met in G20 summit agreed

Officers IAS Academy, Chennai that there has been large scale improvement in bilateral ties between the two countries after the Wuhan summit.

- India-China has various problems to be solved out such as Doklam issue, CPEC, Belt and Road Initiative (BRI), Border intrusions, String of pearls etc.
- The leaders of both countries are taking progressive steps to bridge out the differences between them.
- Summits such as Qingdao Summit, Wuhan summit were conducted to increase the ties between the countries.
- The talks on defence issues, globalisation, protectionism, agricultural exports (sugar and rice) were discussed among the countries.

Wuhan Summit

- It was the first Informal Summit held in Wuhan in April, 2018 between PM Narendra Modi and Chinese President Xi Jinping.
- They emphasized on strengthen strategic communication and upheld the importance of building an **multipolar, participatory global economic order** which will enable all countries to pursue their development and contribute to the elimination of poverty and inequality in all regions of the world.

Qingdao Summit

- PM Narendra Modi & Chinese President Xi Jinping met on the side-lines of Shanghai Cooperation Organization (SCO) Summit at Qingdao, China.
- MoU on sharing hydrological information on the Brahmaputra river by China.
- Amendment of the protocol on phytosanitary requirements for exporting non-Basmati rice from India to China
- Both countries have agreed to undertake a joint India-China economic project in Afghanistan.

RIC

- It is a trilateral grouping of Russia, India and China that has met annually since 2002.
- Leaders of India, China and Russia called for reforming multilateral institutions, including the United Nations (UN) and the World Trade Organization (WTO) during the RIC meeting in G20 summit.
- They also planned to strengthen cooperation through BRICS (Brazil, Russia, India, China and South Africa), the SCO

(Shanghai Cooperation Organization) and the East Asia Summit (EAS) mechanisms.

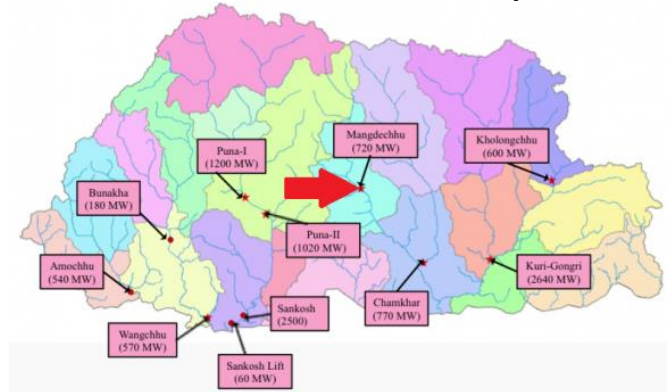
- They also agreed to have regular consultations to jointly promote international and regional peace and stability, actions against terrorism and climate change.

Way Forward

- India has used the latest G20 summit to help them in assuming leadership role on global issues of people's concerns such as climate change, renewable energy, corruption and disaster resilient infrastructure.
- With India hosting G20 summit in 2022 in coincidence with its 75th Independence Day celebrations, issues such as Hunger, sanitation, health, higher education, skill, and indigenous manufacturing base must be widely discussed.

Mangdechhu hydropower project

- The Indian government has planned to commission Mangdechhu hydropower project (750-megawatt) in Bhutan.
- It is a river power plant being built on the Mangdechhu River in central Bhutan.
- Mangdechhu Hydroelectric Project Authority (MHPA), which is constituted by the Indian Government and the Royal Government of Bhutan, is developing the project.
- Mangdechhu is one of the ten hydroelectric projects planned under the Royal Government of Bhutan's initiative to generate 10,000MW hydropower by 2020 with support from the Government of India.
- An agreement was signed between the two governments for the execution of Mangdechhu HEPP in April 2010.
- This announcement came at the conference organised by the Indian Council of World Affairs (ICWA) that was organised to mark half century of diplomatic ties between two countries.



Indian Council of World Affairs (ICWA)

- It was established in 1943 by group of Indian intellectuals as think tank.
- It was established as non-official, non-political and non-profit organisation under Registration of Societies Act 1860
- It was declared institution of national importance in 2001.
- ICWA is devoted exclusively for the study of international relations and foreign affairs.
- Vice President of India is its ex-officio President.

India-Bhutan relations

- Bhutan was one of the first countries to recognize India's independence in 1947 and both nations have close relations.
- India shares 605 kilometers border with Bhutan and is its largest trading partner.
- India-Bhutan Treaty of friendship and Cooperation was signed in 1949 and was updated in 2007.
- India-Bhutan Trade and commerce agreement was signed in 1972.
- Project Dantak by Border Roads Organisation has built all the major highways in Bhutan under funding of Government of India.
- The Doklam issue is happening in the border of India-China-Bhutan. Bhutan also helped in launching **Operation All Clear** against Indian insurgents taking shelter in Bhutan in 2003.
- India has been assisting in major projects in Bhutan including the 1020 MW Tala Hydroelectric Project, 336 MW Chukha Hydroelectric Project, 60 MW Kurichhu Hydroelectric Project, Penden Cement Plant, Paro Airport, Bhutan Broadcasting Station, Major Highways etc.
- Prime Minister Narendra Modi had his first foreign visit after taking charge to Bhutan.

Why in news?

- Recently Foreign minister of Bhutan gave a full-length interview.

Qatar to quit OPEC

What is OPEC?

- The Organization of the Petroleum Exporting Countries (OPEC) is a permanent, intergovernmental Organization, created at the **Baghdad Conference** on September 10–14, 1960, by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela.
- OPEC's objective is to co-ordinate and to unify petroleum policies among Member Countries, in order to secure fair and stable prices for petroleum producers. It administers that an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on capital to those investing in the industry.
- As of 2018, the 15 countries accounted for an estimated 44 percent of global oil production and 81.5 percent of the world's "proven" oil reserves. OPEC's members are Algeria, Angola, Ecuador, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Republic of the Congo, Saudi Arabia (the de facto leader), United Arab Emirates, and Venezuela, while Indonesia is a former member.
- Since the 1980s, representatives from Egypt, Mexico, Norway, Oman, Russia, and other oil-exporting nations have attended many OPEC meetings as observers.

Qatar jump out

- Qatar has been a member of OPEC since 1961; it has decided to pull out by January 2019, after turbulent time in Gulf politics, with Doha under a boycott by neighbouring countries from last July 2017.
- Qatar has signalled its disapproval with an organization perceived to be subject to increasing Saudi interference.
- It has directed national resources toward natural gas rather than oil as the backbone of its energy policy. Qatar announced its plans to boost gas production to 110 million tonnes a year by 2024.
- Offshore North Field, which straddles the maritime border between Qatar and Iran remains the largest non-associated gas field ever found, with more than 130 years of reserves at current production rates of 77 million tons a year.
- Qatar is also looking for new longer-term natural gas agreements with partners worldwide, including China, Japan and Britain, to demonstrate that Qatar remained open for business.
- In 2016, Qatar was the 4th largest natural Gas producing country.

175th Meeting of OPEC conference

- Due to slashing oil prices due to multiple reasons, the group is discussing on cut of production by 1 million barrels per day to regain the prices.
- This is only successful when Russia (2nd largest producer) curbs 150,000 barrels per day. Many of the OPEC countries has agreed to stay with the agenda but has said that their country's needs would be given first priority.

Science & Technology

Train 18

- Train 18 is India's first engine less-train and costs approximately Rs 100 crore
- It was produced indigenously by Integral Coach Factory (ICF), Chennai in a record time of 18 months.
- It will replace the Shatabdi Express.

Features

- Train 18 is also the fastest train clocking 180kmph during trails and capable of reaching 200kmph if tracks and signal systems are upgraded.
- The train comes with aerodynamically designed driver cabins at both ends for quicker turn-around at destinations.
- Alternate coaches are motorized to ensure even distribution of power and faster acceleration or deceleration.
- It comes with regenerative braking system to save power and automatic doors with retractable steps.
- It comes with latest technologies such as onboard Wi-Fi and infotainment and GPS based passenger information system.
- Bio-vacuum toilets have been installed including disabled friendly ones.
- Safety is ensured as CCTVs are installed in all coaches.

Baby born from uterus of dead donor

What's the new?

- A woman from Brazil has become the first in the world to have given birth to a child after a uterus transplant from a deceased donor.

Background

- 10-15% of couples of reproductive age are infertile. One in 500 women have problem with uterus such as malformation, hysterectomy or infection etc.
- Uterus donation from live donor is only possible from family members.

Previous attempts

- In 2014, in Sweden, the first successful childbirth following uterine transplant from a living donor took place.
- Previously 10 other uterus transplants from deceased donor was attempted in US, Czech Republic and Turkey which were not successful.

Advantages

- Transplant from deceased donor removes the surgical risk on live donor
- The number of people willing to donate their organs post death is more than live donors. Therefore more uterus transplants is possible for people who currently have to resort to adoption or surrogacy.
- Through implanting the fertilised eggs sooner they reduced the amount of time taking immunosuppression drugs, which could help to reduce side effects and costs

Hackathon on Artificial Intelligence

Background

- The idea of organising hackathon was mentioned in the National AI Strategy released by NITI Aayog.

Objective

- To promote awareness and subsequently develop solutions that deliver the twin benefit of efficient computing to address the infrastructure challenges, while also not compromising on privacy of data for training AI algorithms.

About

- NITI Aayog in partnership with Perlin, a Singapore based AI startup will be conducting the hackathon.
- The challenge question seeks to develop solutions in Distributed Computing and Privacy Preserving techniques, such as multi-party computation, in AI.
- Participants include developers, students, start-ups and companies
- The hackathon consists of two stages
- The first stage will invite ideas for use cases of multi-party computation in areas such as Healthcare, Education, Agriculture, Urbanization, and Financial Inclusion.
- The second stage will call for these ideas to be matured and developed, with a focus on privacy preserving AI and distributed computing.

Other summits organised by NITI Aayog

- NITI Aayog organized its first hackathon, 'MoveHack' in August, on the side-lines of the Global Mobility Summit 2018, with the aim of garnering cutting-edge mobility applications.

National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)

- The NM-ICPS is a comprehensive Mission which would address technology development, application development, human resource development & skill enhancement, entrepreneurship and start-up development in CPS and associated technologies

Objective

- Establishment of 15 numbers of Technology Innovation Hubs (TIH), six numbers of Application Innovation Hubs (AIH) and four numbers of Technology Translation Research Parks (TTRP)
- These Hubs & TTRPs will connect to Academics, Industry, Central Ministries and State Government in developing solutions at reputed academic, R&D and other organizations across the country in a hub and spoke model

Structure

- Strong Steering and Monitoring Mechanisms in the form of Mission Governing Board (MGB), Inter-Ministerial Coordination Committee (IMCC), Scientific Advisory Committee (SAC) and other Sub-Committees will guide and monitor the Mission implementation.
- The Hubs & TTRPs have four focused areas along which the Mission implementation would proceed, namely (i) Technology Development; (ii) HRD & Skill Development; (iii) Innovation, Entrepreneurship & Start-ups Ecosystem Development; (iv) International Collaborations.

Benefits

- The Mission will feed the Central Ministries/ Departments and State Govts and also the Industry to effectively use the CPS technologies in their projects and schemes for the benefit of the society.

Impact

- The proposed Mission would act as an engine of growth that would benefit national initiatives in health, education, energy, environment, agriculture, strategic cum security, and industrial sectors, Industry 4.0, SMART Cities, Sustainable Development Goals (SDGs) etc.
- CPS is an integrated system of upcoming technology, which in turn is being taken up

Outcomes

- The mission implementation would develop and bring:
 1. Cyber Physical Systems (CPS) and associated technologies within reach in the country,
 2. Adoption of CPS technologies to address India specific National / Regional issues,
 3. Produce Next Generation skilled manpower in CPS,
 4. Catalyze Translational Research,
 5. Accelerate entrepreneurship and start-up ecosystem development in CPS,
 6. Give impetus to advanced research in CPS, Technology development and higher education in Science, Technology and Engineering disciplines, and place India at par with other advanced countries and derive several direct and indirect benefits.

Why in news?

- The Union Cabinet chaired by Prime Minister Shri Narendra Modi today has approved the launching of National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)

GSAT-11

- GSAT-11, India's heaviest communications satellite was launched from Guiana, South America aboard the Ariane space vehicle.

About the satellite

- GSAT-11 is India's 6-tonne class advanced communication satellite
- The 5854 Kg satellite will have a life span of 15 years
- It will be placed in geostationary orbit.
- GSAT-11 carries eight transponders for the first time in the complex

Geostationary orbit

- Geostationary orbit is a circular orbit directly above the Earth's equator.
- This orbit is present at an altitude of approx. 35,786 km in the equatorial plane.
- Geostationary satellites have the special property of remaining permanently fixed in exactly the same position in the sky, meaning that ground-based antennas do not need to track them but can remain fixed in one direction.
- Such satellites are often used for communication purposes.

Applications

- The satellite will enable high-speed satellite-based Internet services to users in rural, remote areas
- It will help to increase the coverage of Digital India programme, BharatNet for rural e-governance, e-health, e-education, e-banking etc. and commercial and public sector VSAT Net service providers.
- It can meet unprecedented data demands through greater capacity and high data rates over regions due to use of spot beam technology.
- In-flight internet services will be possible
- It will facilitate developing new applications

High-throughput communication satellites (HTS)

- GSAT-11 is the latest high-throughput communication satellite in addition to the existing GSAT-29 and GSAT-19.
- These satellites would provide high-speed internet data services at the rate of 100Gbps
- A high throughput satellite (HTS) is a satellite that has many times the throughput of a traditional satellite for the same amount of allocated frequency on orbit.
- These satellites take advantage of frequency reuse and multiple spot beams to increase throughput and reduce the cost per bit delivered, regardless of spectrum choice.
- Throughput is the speed of information delivery (bits/sec),

Spot beam technology

- A spot beam is a satellite signal that is especially concentrated so that it covers only a limited geographical area. The narrower the beam greater the power.

Why India didn't develop heavy lift launch vehicles?

- GSLV MK III can carry satellites weighing 4000kg to the geostationary orbit. The GSAT 11 weights around 6000kgs and was put in space by the French launch vehicle Ariane.
- Ariane 5 is a very reliable launch vehicle which India uses to launch very heavy satellites.
- It is not necessary for India to build a launch vehicle for a heavy satellite which it will launch once in a while. It is more economical to launch with third party rather than build one.

- In future, electronics may get miniaturized and there will be no need for heavy satellites.
- The future projects of ISRO may not need such heavy lift vehicles and that's why a vehicle with 4000kg capacity was built.

Why in news?

- India's heaviest communication satellite GSAT-11 launched successfully from French Guiana

InSight - Mars Lander

What's InSight?

- InSight is short for Interior Exploration using Seismic Investigations, Geodesy and Heat Transport, is a Mars lander.

Objective

- To explore deep interior of Mars which are least known
- To investigate the interior building blocks below surface.
- To understand the formation and evolution of all rocky planets (rocky planets - Mercury, Venus, Earth and Mars)
- The lander will measure the planet's vital signs such as 'pulse' (seismology), 'temperature' (heat flow) and 'reflexes' (precision tracking)

Firsts

- 1st robotic lander
- 1st mission for studying deep interior of mass
- 1st time seismometer is placed on another planet
- 1st time robotic arms have been used to place instruments on surface of another planet
- 1st time Mars surface has been drilled to a depth of 16ft.

Mars Cube One (MarCO)

- MarCo was launched as a separate NASA technology experiment which includes two mini-spacecraft along with the insights launcher.
- Their goal was to test new miniaturized deep space communication equipment.
- This was the first test of miniaturized CubeSat technology at another planet

Why is it difficult to land on Mars?

- Mars has a thin atmosphere and gravitational force of about one third of Earth's gravity. Thus conditions are not conducive for slowing down and hence efforts must be made to slow down or else it will crash.

Earlier mission

- NASA has established that Mars was warmer and wetter once which is conducive for life

Future mission

- In July 2020, mission will be launched to Mars to find for signs of ancient habitable conditions and past microbial life on planet.

Hysis Satellite

- India's first Hyper spectral Imaging Satellite or Hysis is an Earth observation (EO) satellite.
- It weighs 380kg and was placed in sun synchronous orbit.
- It was launched by PSLV C-43 and has a life span of 5 years.

Earth observation satellites

- ISRO has launched many operational remote sensing satellites such as CARTOSAT 2, RESOURCESAT 1, OCEANSAT 2 etc.
- The data from these satellites are used for several applications covering agriculture, water resources, urban planning, rural development, mineral prospecting, environment, forestry, ocean resources and disaster management

Sun Synchronous Orbits

- These orbits allow a satellite to pass over a section of the Earth at the same time of day.
- These satellites orbit at an altitude between 700 and 800 km.

Objective

- To study the surface of earth and provide hitech images

What is Hyperspectral Imaging?

- It is the process of scanning and displaying an image within a section of the electromagnetic spectrum.
- To create an image that human eye can see, the energy levels of a target are color-coded and then mapped in layers.
- This set of images provides specific information about the way an object transmits, reflects, or absorbs energy in various wavelengths.

Significance of hyper spectral imaging

- Hyper spectral images provide much more detailed information about the scene than a normal color camera, which only acquires three different spectral channels corresponding to the visual primary colours red, green and blue.

- Hyper spectral imaging leads to a vastly improved ability to classify the objects in the scene based on their spectral properties.

Optical imaging detector chip

- It has an on-board optical imaging detector chip (Developed by Space Applications Centre, Ahmedabad) which will enable it direct identification of objects on earth by reading the spectrum for each pixel of a scene from space.
- With this chip, a satellite can identify 55 spectral or colour bands from 630 km above ground.

Science and Technology of Yoga and Meditation - SATYAM

- This research program was launched by Department of Science and Technology in 2015 under its Cognitive Science Research Initiative
- Yoga and Meditation are interdisciplinary endeavours that interface with Neuroscience, Medicine, Psychology, Philosophy,
- This programme is aimed to foster scientific research on the effects of yoga and meditation on physical & mental health and on cognitive functioning in healthy people as well as in patients with disorders.

Objective

- To strengthen research in the areas of yoga and meditation
- To harness knowledge obtained in academic institutions and other related agencies for finding Science & Technology - led solutions

Major thematic areas

- Investigations on the effect of Yoga and meditation on physical and mental health
- Investigations on the effect of Yoga & meditation on the body, brain and mind in terms of basic processes

Cognitive Science Research Initiative

- The Cognitive Science Research Initiative facilitates a platform to scientific community to work for better solution of challenges related with cognitive disorders and social issues through various psychological tools & batteries, early diagnosis & better therapies, intervention technologies and rehabilitation programmes.

GROWTH-India telescope

- Global Relay of Observatories Watching Transients Happen (Growth) - India Telescope is located in Hanle, Ladakh and has made its first science observation.

About the telescope

- It is the country's first robotic telescope and the first one designed to observe dynamic, or transient, events in the universe.
- It was developed as a joint project by the Indian Institute of Astrophysics (IIAp), Bengaluru and Indian Institute of Technology (IIT), Bombay.
- It is part of a multi-country collaborative initiative known as Global Relay of Observatories Watching Transients Happen (GROWTH) to observe transient events in the universe.

GROWTH initiative

- It is an international collaborative network of astronomers and telescopes dedicated to the study of short-lived cosmic transients and near-earth asteroids.
- Universities and research institutes from the US, the UK, Japan, India, Germany, Taiwan and Israel are part of the initiative.
- Indian Institute of Astrophysics is the collaborating partner from the India.

Objectives:

- Search for explosions in the optical regime whenever LIGO group detects a Binary Neutron Star merger.
- Study nearby young supernova explosions
- Study nearby asteroids.

Butterfly survey

About the survey

- A recent survey held in the reserve spotted 221 varieties of butterflies, 11 of which were endemic to the area.
- The survey, initiated jointly by the Department of Forest and Wildlife, Parambikulam Tiger Conservation Foundation, and the Wayanad-based Ferns Naturalists Society,

Findings of the survey

- Major species spotted were Small Palm Bob, Silverstreak Blue, Orange-tail Awl, and Red-disc Bushbrown.
- Orange-tail Awl gets active only during early morning hours and late in the evening.

- The survey team recorded migration patterns of rare species such as Dark Blue Tiger and Common Crow.
- Buddha Peacock or Buddha Mayoore, which was recently declared as State butterfly of Kerala, was found in abundance in some areas of the forest
- Red-disc Bushbrown is a high-altitude species endemic to Western Ghats which is found in an area of Nelliampathy region at an altitude of 1,320 m

Parambikulam Tiger reserve

- The Parambikulam Tiger Reserve (PTR) is a protected area located in Chittur taluk in Palakkad district of Kerala
- It is home to lion-tailed macaques, Nilgiri tahr, elephants, Bengal tigers, Indian leopards, Nilgiri marten small Travancore flying squirrel, etc

Improved Li-ion battery

What's in news?

- An anode has been made of a composite consisting of phosphorene and silicon nanoparticles

Silicon electrode

- Silicon has a capacity limit of 4200 mA h per gram which is 10-12 times higher than that of carbon-based anodes which have a capacity of 372 mA h per gram
- This potential however could not be harnessed in lithium ion batteries as lithium forms an alloy with silicon and the alloy undergoes massive volume expansion up to 300% while charging.
- The repeated expansion and contraction cause the electrode to break and makes it unfit for use in battery.

Silicon phosphorene electrode

- Researchers have used 8% of phosphorene to improve the stability of silicon electrode.
- The electrode did not develop cracks even after 250 cycles of charging and discharging while silicon electrode developed cracks after 20 cycles.
- The capacity of the battery was high at 1600 mA h per gram even after 250 cycles. This means that the battery can be fully charged quickly.
- Phosphorene has flexibility because of its low young's modulus and can absorb the huge stress when silicon expands. The ability of phosphorene to absorb stress is due to its structure

Preparation

- Silicon-phosphorene anode was prepared by physically mixing the dispersions of silicon Nano particles and chemically exfoliated sheets of few-layer of black phosphorous
- The mixture is then coated on a copper foil to make it function like an anode

Officers IAS Academy, Chennai

- An intestinal infection marked by diarrhoea, cramps, nausea, vomiting and fever.
- Stomach flu is typically spread by contact with an infected person or through contaminated food or water.
- Diarrhoea, cramps, nausea, vomiting and low-grade fever are common symptoms.

Rotavirus & mother's milk

About the research

- The oligosaccharides (sugars) present in mother's milk which should actually kill the rotavirus, enhanced the infection of cells with rotavirus.
- It also improved the replication of vaccine and thus boosts immune response of the babies. Overall, it provides better protection for the babies.
- The multiple aspects of breast milk – microbiome and its composition including sugars have been studied. This research will pave the way for improving the quality of breast milk and its beneficial impact on children.

Rotavirus

- Rotavirus is caused by a virus, and it mostly affects babies and young children.
- It is a genus of double-stranded RNA viruses in the family Reoviridae
- It is the most common cause of diarrhoea among infants and young children.
- Rotavirus infection is one of the leading causes of gastroenteritis in children under five years
- It usually transmitted by the faecal-oral route and infects and damages the cells in the small intestines and causes gastroenteritis.
- Children who get infected may have severe watery diarrhoea, vomiting, fever, or abdominal pain.

ROTAVAC Vaccine

- ROTAVAC vaccine is the first vaccine conceived and developed from scratch by India has been pre-qualified by the WHO
- It is a low cost vaccine developed by Bharat Biotech Limited under an innovative PPP model involving Ministry of Science and Technology, institutions of the US Government and various NGOs.
- It has been included in India's Universal Immunization Program in 2016.

Gastroenteritis (Stomach flu)

Human milk microbiome

- The human milk microbiota refers to the community of microorganisms residing in the human mammary glands and breastmilk.
- They play a pivotal role in modulating and influencing the new-borns' immune system
- It helps create the initial intestinal microbiota of infants

Why in news?

- Scientists have found the relation between rotavirus infections in babies, sugars of mother's milk and microbiome of mother's milk.

Soyuz Mission

Overview

- The Soyuz is a Russian spacecraft had successfully reached the orbit, which had travel to the International Space Station.
- It consists of Russian, American and Canadian astronauts which took off from Kazakhstan.
- It gained more important as the earlier mission on October, 2018 was failure.
- The Soyuz is like a lifeboat for the space station.
- If there is an emergency, the station crew can use the Soyuz to return to Earth.
- The Soyuz is the only means of reaching the ISS since the U.S. retired the space shuttle in 2011.

International Space Station

- The International Space Station is a large spacecraft in orbit around Earth. It serves as a home where crews of astronaut.
- It orbits Earth at an average altitude of approximately 250 miles.
- The space station is used usually to learn more about living and working in space.
- The ISS programme is a joint project among five participating space agencies NASA, Roscosmos, JAXA, ESA, and CSA.
- The ownership and use of the space station are established by intergovernmental treaties and agreements.

GM crops

GM crops

- A Genetically Modified or transgenic crop is a plant that has a combination of genetic material obtained through the use of modern biotechnology.
- A GM crop can contain a gene that has been artificially inserted instead of the plant acquiring it naturally through pollination.
- The major need for cultivation of GM crops are said to be Higher crop yields, Reduced farm costs, Improvement in health and the environment.
- Lack of clarity, threat to domestic crops and pest resistance are major drawbacks of GM crops.

GM crops in India

- Bt-cotton was the first genetically modified crop to be approved for cultivation in India in 2002.
- Bt-stands for *Bacillus thuringiensis*, a bacterium that produces toxins harmful to a variety of insects.
- The **Genetic Engineering Appraisal Committee (GEAC)** had given approval for GM Mustard DMH-11 (Dhara Mustard Hybrid) and Bt-Brinjal.
- The approval for GM mustard was later withdrawn and for Bt-Brinjal, the government has stayed further process.
- There are as many as 20 GM crops already undergoing trials at various stages.

Recent controversy

- Leading agriculture scientist M.S. Swaminathan, in a research paper, has described Bt cotton as a 'failure'.
- The paper has stated that Bt-Cotton has failed as a sustainable agriculture technology and also failed to provide livelihood security for cotton farmers who are mainly resource-poor, small and marginal farmers.
- With cost of GM seeds are high; it was not viable to small farmers to procure them.
- It also states that the precautionary principle (PP) has been done away with and no science-based biosafety protocols and evaluation of GM crops are done.
- Due the Pest (pink bollworm) attack in Bollgard II cotton, the farmers are going back to traditional pest management.
- Yields are said to be stagnated and no further increase in production is seen.

- He also suggested that Genetic engineering technology is supplementary, need based and must be kept as last resort.

Genetic Engineering Appraisal Committee (GEAC)

- The Committee is a Statutory Body under the Ministry of Environment & Forests.
- It provides approval of activities involving large-scale use of hazardous living microorganisms and recombination of genes in research and industrial production.
- The Committee is also be responsible for approval of proposal relating to release of genetically engineered organisms and products into the environment including experimental field trials.
- These are done under Rules for Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells 1989, which was notified under Environment (Protection) Act, 1986.

Role of Phosphorous

- 9 million tonnes of phosphorous is imported by India every year
- Phosphate resources in India is very poor comprising of 190 million tonnes
- The world requirements of phosphate is 200 million tonne per year
- Phosphate resources are found in Morocco, China, US, Russia, Middle East

Where?

- It is present in all living organisms as it is present in DNA and RNA

Phosphorous cycle

- The phosphorus cycle is the biogeochemical cycle that describes the movement of phosphorus through the lithosphere, hydrosphere, and biosphere.
- Phosphorous is present in rock and sedimentary deposits and is released by weathering, leaching and mining.
- Microorganisms produce acids that form soluble phosphate from insoluble phosphorus compounds.
- The phosphates are utilized by algae and terrestrial green plants, which in turn pass into the bodies of animal consumers.
- Upon death and decay of organisms, phosphates are released for recycling.

Phosphorus in agriculture

- The main nutrients required for the growth of plants are said to be Nitrogen, Phosphorus and Potassium.
- They are called primary nutrients or macronutrients.
- Phosphorous is the second most essential mineral for plants after nitrogen.
- Phosphorus stimulates early root growth, helps in maturity, stimulates blooming etc.
- The phosphorus load from agricultural fields increased by 27% over the period (2002 to 2010) due to the extensive use of mineral fertilizers and manure.
- It had caused escalating the levels of phosphorus in freshwater bodies and could pose a serious threat to the ecosystem.

Problems

- Phosphate fertilizer is very reactive and only 20 % is taken up by plants and the rest is fixed in soil and becomes insoluble.
- The left over phosphorous microbes present in soil convert it into organic form which cannot be used by plants. It is mineralized and washed away
- Phosphorous based fertilizers are used heavily in agriculture and the washed away and lands in water bodes leading to pollution (algal blooms and fires – Lake Erie and Bengaluru Lake respectively)
- Phosphorous in soil is lost after harvest.
- Phosphorous fertilizers are costly and thus farmers are subsidized
- Geopolitical issues could rise in future as the resources of phosphorous are very scarce.

Way forward

- We need to develop crops which utilise phosphorous in a better way.
- Phosphorous absorption can be increased in two ways, an enzyme released by roots can degrade the fixed phosphorous and release it for root uptake and by increasing the root hairs
- We need to reduce the use of phosphate fertilizers which in turn will reduce the input cost and pollution

Progesterone against breast cancer

About the research

- Progesterone injected before the surgery benefits the breast cancer patients
- This works in patients irrespective of the presence of progesterone receptors
- Progesterone treatment prior to surgery reduces the chances of migration and

invasion ability of primary cancer cells to other parts of the body

How women without progesterone hormone too benefited?

- The research found that on treatment with the hormone, two genes SGK1 and NDRG1 were produced in abundance and few microRNAs reduced in response to the hormone
- The normal function of the two microRNAs is to reduce the amount of SGK1 enzyme produced. So when the microRNAs are down regulated, the amount of SGK1 enzyme produced increases
- There is dual phase regulation of SGK1 because progesterone treatment directly increases the amount of SGK1 enzyme produced and also causes the two microRNAs to increase the amount SGK1 produced.
- In women who don't have the receptors, the progesterone reduces the expression of microRNAs leading to increased expression of SGK1

Significance

- As the molecular mechanism has been understood, drugs can be used to target SGK1 or NDRG1 and increase its levels without injecting progesterone

Similar researches

- Another set of genes AP-1 regulate the expression of the NDRG1 gene. Since AP-1 genes are stress genes, it was suggestive that stress might be responsible for increased production of the NDRG1 enzyme.
- Another study established the possibility of the progesterone hormone stressing the cancer cells causing the NDRG1 levels to be elevated in the tumour.

Conclusion

- Three genes (SGK1, NDRG1 and AP-1) play a role in controlling spread of cancer, but the the way the three genes are linked is not known
- When any of the three genes was introduced it resulted in significant reduction in the spread of cancer cells even in the absence of progesterone.
- In case of removal of any of the three genes the progesterone that was injected did not arrest the migration or invasion ability of cancer cells.

MicroRNAs

- MicroRNAs represent small RNA molecules encoded in the genomes of plants and animals.
- MicroRNAs are one of the key players in cell differentiation and growth, mobility and death of cells.
- It regulates diverse aspects of development and physiology, thus understanding its biological role is proving more and more important.

Progesterone

- Progesterone is a hormone secreted by the female reproductive system only in women.
- The hormone plays a vital function in the menstrual cycle, pregnancy and embryogenesis.

Why in news?

- Scientists have found how the injection of progesterone before the surgery reduces the chances of spread of breast cancer.

Defence and security

Bilateral Joint Exercises

Ex Cope India-18

- Cope India are a series of Air Force exercises between the Indian Air Force and the United States Air Force conducted on and over Indian soil. First was conducted in February 2004.
- 4th edition conducted 12 day joint exercise. The aim of exercise is to undertake mutual exchange of best practices towards enhancing operational capability.
- It is for the first time the exercise has been planned at two Air Force bases in West Bengal's Kalaikunda and Panagarh.

Other India-US defense exercises

- Malabar Trilateral Exercise- Trilateral Naval Exercise between India, USA and Japan
- Vajra Prahar- India-USA Joint Military Exercise
- Yudh Abhyas- India-USA Joint Military Exercise
- Exercise Red Flag- Aerial combat exercise

EX SHINYUU Maitri-2018

- The Japanese Air Self Defence Force (JASDF) with Indian Air Force conducted bilateral air exercise SHINYUU Maitri-18 from 03-07 Dec 18 at A F Station Agra.

- This is first air exercise between the two Air Forces.
- Theme of the exercise is **joint Mobility/Humanitarian Assistance & Disaster Relief (HADR) on Transport aircraft.**
- Display of heavy loading/ offloading are also planned to be practiced during this exercise.
- IAF is participating with **An-32** (cargo handler aircraft) and **C-17** (Very Heavy Lift Transport Aircraft) aircrafts with aircrew & observers.

Sino-India Joint Exercise Hand-in-Hand 2018

- 7th round of their 'Hand-in-Hand' military drills between armies of China and India conducted in Chinese city of Chengdu from 11 Dec to 23 Dec 2018.
- The aim of the exercise is to build and promote close relations between armies of both the countries and to enhance ability of joint exercise commander to take military contingents of both nations under command.
- Troops from the Indian side have been selected from 11 SIKHLI of Indian Army, while troops from a unit of Tibetan military district will be taking part
- In 2017, Doklam issue stranded this annual exercise.

Environment

Tigers rising

Why in news?

- At a time when tiger deaths dominate national news, a new study offers hope for wild tiger populations across countries by showing that under optimal conditions, tiger numbers can triple in 18 sites across the world, including eight in India.

About the study:

- The study, published in **PLOS ONE**, was conducted by 49 conservationists of the World Wide Fund for Nature (WWF) across 10 tiger-range countries.
- The results reveal that the eight recovery sites in India currently support 165 tigers; they could increase to 585 individuals.
- The 8 sites are: **Anamalai-Vazhachal (in Tamil Nadu-Kerala), Sathyamangalam (Tamil Nadu), Balaghat (Madhya Pradesh), Achanakmar (Chattisgarh), western Rajaji and Nandhaur (Uttarakhand), Manas (across Assam-Bhutan) and Valmiki (across Bihar-Nepal).**

World Wide Fund for Nature (WWF)

- The WWF is an **international non-governmental organization** founded in **1961**, working in the field of the wilderness preservation, and the reduction of human impact on the environment.
- It was formerly named the **World Wildlife Fund**, which remains its official name in Canada and the United States.
- WWF published: **Living Planet Index** in collaboration with Zoological Survey of India. Along with Ecological footprint calculation, the index is used to produce a bi yearly living planet report giving an overview of the impact of humans on the world.
- The mission of WWF's is **"to stop the degradation of the planet's natural environment and to build a future in which human live in harmony with nature"**.
- Currently, much of its work focuses on the conservation of three biomes that contain most of the world's biodiversity: **oceans and coasts, forests, and freshwater ecosystems.**

India Water Impact Summit-2018

Why in news?

- Union Minister for Water Resources, River Development and Ganga Rejuvenation Shri Nitin Gadkari will inaugurate India Water Impact Summit 2018, being jointly organized by the National Mission for Clean Ganga (**NMCG**) and the Centre for Ganga River Basin Management and Studies (**cGanga**) from 5-7 December 2018 in New Delhi.
- The India Water Impact Summit is an **annual event** where stakeholders get together to discuss, debate and develop model solutions for some of the biggest water related problems in the country.

The Summit will focus on three key aspects:

- Spotlight on 5 states: Uttarakhand, Uttar Pradesh, West Bengal, Delhi and Bihar.** The objective is to showcase the efforts and works going on within the respective states.
- Ganga Financing Forum:** The 2018 Summit also introduces the inaugural Ganga Financing Forum that will bring a number of institutions to a common knowledge, information and partnership platform.
- The **Hybrid Annuity Model** has redefined the economic landscape of water and waste-water treatment in India. All tenders have been successfully bid out and financial closures being achieved. Additionally, the Government is also now encouraging development of smaller decentralised wastewater treatment projects.
- The Financing Forum will bring together financial institutions and investors interested in Namami Gange programmes.
- Technology and Innovation:** Implementation of the pilot/demonstration programme known as the **Environment Technology Verification (ETV) process.**
- This will provide an opportunity to technology and innovation companies from around the world to showcase their solutions for addressing the problems prevalent in the river basin.
- The government has freed Kanpur from the ill effects of Sisamau drain after 128 years,

which was infamous for the pollution it was causing to River Ganga.

- **Green Ganga App**, developed by **Remote Sensing Centre of ISRO** was also launched during the occasion and used for geo-tagging of saplings and delineation of plantation boundaries under ongoing afforestation activities of Namami Gange programme.

National Mission for Clean Ganga (NMCG):

- NMCG is a river cleaning project.
- It was established in 2011 as a registered society under Societies Registration Act, 1860,
- In October 2016, **National Ganga Council has replaced National Ganga River Basin Authority (NGRBA)** which was constituted under the provisions of the **Environment (Protection) Act (EPA), 1986.**

International Conference on Bears

Why in news?

- An international conference on bears is organising in Agra, Uttar Pradesh.
- Aim: Sharing knowledge on the principles of the welfare of bears and other wild animals in zoos, sanctuaries and rescue centres.
- **Hosted by Wildlife SOS** in collaboration with Bear Care Group from the **US and Canada.**

Wildlife SOS:

- Wildlife SOS (WSOS) is a conservation **non-profit** in India, established in 1995 with the primary objective of rescuing and rehabilitating wildlife in distress in the country, and preserving India's natural heritage.
- One of the largest Wildlife Organisations in South Asia.
- Although internationally known for ground breaking work of eradicating the cruel and barbaric practice of Dancing Bears from the streets of India while creating alternative livelihoods for the nomadic communities that depended on the exploitation of the bears.
- WSOS is also known for their efforts at rescue and rehabilitation of **sloth bears (vulnerable-IUCN Red list)** and more recently elephants.
- Also runs active projects focused on mitigation of human wildlife conflict with regard to species like Leopards, Macaques,

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Elephants, Moon bears, Snakes etc. across several states in India.

Floating solar power plant in Rihand

Why in news?

- A 50 MW floating solar plant will be set up in the country's largest reservoir **Rihand dam** in Sonbhadra district of **Uttar Pradesh.**

About the floating solar plants:



- An **alternate option to tackle land availability issues.** (Uttar Pradesh)
- The concept involves setting up solar panels on floats placed on dams, lakes and similar water bodies.
- Floating solar makes intuitive sense in geographies with high land costs and poor availability.
- The **global floating solar market is driven by Asian countries, with China and Japan being home to bulk of the existing operational capacity of 259 MW.**

Challenges:

- More **expensive.**
- The tariff for large scale solar around the country is well under Rs 3 per kWh.
- The **higher tariffs in UP** is partly **due to higher land costs** as there isn't a lot of waste land available for the taking in the highly fertile, populated state.
- The floating platforms, on which the plants are mounted on the water surface, and anchoring to keep the plant fixed over the fluid, is estimated to be more than 20 %of the total plant capital expenditure.
- **Floating devices are difficult to transport incurring costs that are five times that of the solar panels.**
- It is also unclear if there is an indigenous manufacturing base for the floatation devices.

Rihand Dam:

- Rihand Dam, also known as **Govind Ballabh Pant Sagar**, is the country's largest reservoir by volume and largest

artificial lake, located on the **Rihand River. (Rihand-tributary of Son river and Its old name was Renu or Renuka)**

- Its catchment area spread over Uttar Pradesh, Madhya Pradesh and Chhattisgarh.

Additional info

- The largest floating solar plant to date is a 2MW one in Vishakhapatnam.
- 500-kWh plant- Kerala State Electricity Board at the Banasura Sagar Dam.

Skoch Awards

Why in news?

- Ministry of New and Renewable Energy, Government of India has been conferred the Skoch Award for National Significance at an event held in New Delhi.
- The award was received by Secretary, Ministry of New Renewable Energy Shri Anand Kumar.
- The award has been conferred on the Ministry considering its purpose and critical role played in installing about 73 GW renewable energy capacities in the country.
- India ranks 4th in the world in wind energy capacity and 5th in solar & total renewable energy capacity installed in the world.

India - 3rd largest contributor to carbon emission

Why in news?

- Global carbon emissions are set to hit an all-time high of 37.1 billion tonnes of CO₂ in 2018, according to researchers at the University of East Anglia (UEA) and the Global Carbon Project.
- India, the third-highest contributor, is projected to see emissions rise by 6.3% from 2017.

Highlights:

- The 2.7% projected a global rise in 2018 has been driven by appreciable growth in coal use for the second year in a row, and sustained growth in oil and gas use.
- The 10 biggest emitters in 2018 are China, U.S., **India**, Russia, Japan, Germany, Iran, Saudi Arabia, South Korea, and Canada.
- The EU as a region of countries ranks third.
- China's emissions accounted for 27% of the global total, having grown an estimated 4.7% in 2018 and reaching a new all-time high.

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- Emissions in the U.S., which has withdrawn from its commitment to the Paris Agreement, account for 15% of the global total and look set to have grown about 2.5% in 2018 after several years of decline.
- Limiting global warming to the 2015 Paris Agreement goal of keeping the global temperature increase this century to well below 2°C, would need carbon dioxide emissions to decline by 50% by 2030 and reach net zero by about 2050.

Tiger in the snow

Why in news?

- The **Royal Bengal Tiger (IUCN RED LIST-Endangered)** is known to live in a wide variety of habitats in the Subcontinent.
- Its roar can be heard in moist evergreen forests, dry and coniferous forests, mangroves, subtropical and temperate upland forests and alluvial grasslands.
- A study by researchers of the Wildlife Institute of India has found these majestic creatures in the snow-capped regions of the Eastern Himalaya and the study that began about three years ago has recorded 11 tigers in **Arunachal Pradesh's Dibang Valley**.

Highlights:

- The **Namdapha National Park** in the state is known to be the country's **only reserve to have four big cat species the tiger, leopard and the severely endangered clouded and snow leopards**. (The term "big cat" is typically used to refer to any of the five living members of the genus Panthera, namely tiger, lion, jaguar, leopard and snow leopard. Except the snow leopard, these species are able to roar.)
- The park is in the lower reaches of the Himalaya.
- Their presence at 3,246m and 3,630m in the Dibang Valley is the evidence of tiger at the highest altitude in the Indian part of the Eastern Himalayas the animals have been found at an altitude of more than 4,000m in Bhutan.
- A large part of the Dibang Valley is home to the Mishmi tribes.
- The presence of the big cats in an area which is not even a tiger reserve is, in large measure, a tribute to the ways the Mishmi people have found to co-exist with the animals.

- The cosmology of this tribal group holds tigers to be in special relationship with humans. Killing the animal is deemed fratricidal (relating to or denoting conflict within a single family or organization).
- The discovery of the species should also alert conservation authorities to new challenges.
- The Dibang Valley tiger is reportedly genetically isolated from the other variety of the species in Arunachal Pradesh.
- Inbreeding could jeopardise the prospects of an already fragile population.
- The story of the newly-discovered tigers is also complicated by the fact that the rivers in the Valley are slated to be harnessed for hydropower projects.
- The good news is that conservation authorities are alert to some of the challenges, at least. Talks are underway to understand the genetic difference of the Dibang tigers with that of other varieties of the species in Arunachal.

Additional info:

- The term "big cat" is typically used to refer to any of the five living members of the genus Panthera, namely tiger, lion, jaguar, leopard and snow leopard. Except the snow leopard, these species are able to roar.
- Dibang River originates in the mountains of Tibet and flows through the length of the valley which is named after it.

Dual-Fuel Usage

Why in news?

- The Ministry Road Transport & Highways has notified dual-fuel usage for agricultural and construction equipment vehicles.
- These include tractors, power tillers, construction equipment vehicles and combine harvesters which have originally been manufactured as dual-fuel with **diesel as primary fuel and CNG, Bio CNG as secondary**, or have been converted as such from in-use diesel vehicles.
- This move will give a boost to vehicles run on bio-fuel, and help in reducing both cost and pollution.

What is Dual-Fuel vehicles?

- Vehicles which can run on two different types of fuel. In this case, it is diesel and Natural gas/Bio CNG as the two fuel.

What are the emission standards?

- **Emission norms for smoke and vapour from these dual fuel vehicles** will be

Officers IAS Academy, Chennai same as the prevailing **mass emission norms for the diesel mode with the exception that the HC (Hydrocarbon) shall be replaced by NMHC (Non-Methane Hydrocarbon).**

Bio-CNG:

- Bio-CNG is a purified form of biogas with over 95% pure methane gas.
- It is similar to natural gas in its composition (97% methane) and energy potential.
- While natural gas is a fossil fuel, bio-CNG is a renewable form of energy produced from agricultural and food waste.
- A typical bio-CNG station comprises a biogas purification unit, a compressor, and a high-pressure storage system.
- Bio-CNG is being looked at as an environment-friendly alternative to diesel.

Luxembourg makes mass transit free

Why in news?

- Hit by big traffic jams Luxembourg country becomes the first to offer such benefit, which comes into force in 2020.
- Luxembourg is barely larger than a city-state, with a population of about 560,000. But more than 180,000 workers commute across the border from Belgium, France and Germany.
- Part of the problem is that Luxembourg already has the highest number of cars for its population in the European Union: 662 for 1,000 people, bringing it closest in the region to the United States, a world leader with more than 800 cars per 1,000 people.



- Note down which countries share border with Luxembourg.

Green climate fund

Why in news?

- Indian Finance Ministry has issued a 'discussion paper' that has criticised the accounting methods used by developed

countries to report how much money they have given, so far, to developing countries to address climate change.

Background:

- Accounting procedures, regarding the flow of climate finance, has become one of the most controversial issues being debated at Katowice, Poland where countries have gathered to agree upon a 'Rule Book' to implement the Paris Agreement of 2015, that commits countries to ensure the earth doesn't warm 2 degree C beyond pre-industrial levels.
- In 2019, developed countries are expected to make available \$100 billion annually to developing countries, according to a 2010 agreement in Cancun (Mexico).
- The issue is in 2016, developed countries published a road map to \$100 billion, which claimed that public climate finance levels had reached \$41 billion per year in 2013-14. In 2015, India had disputed this figure arguing it was only \$ 2.2 billion. The 2017 numbers also tell a similar story. Only around 12% of total pledges to climate funds have actually materialised into disbursements.

India's view:

- India argues that the definition of climate finance in the UNFCCC has remained "imprecise and incomplete."
- The total pledges to the **Green Climate Fund (GCF)**, the largest multilateral fund, were a "meagre" \$10.3 billion. Further, most of the total climate finance has flowed into mitigation (a reference to preventing carbon dioxide from being emitted).
- The growth in the reported climate specific finance actually slowed down from 24% between 2014 and 2015 to 14% between 2015 and 2016.

Green Climate Fund (GCF):

- The Green Climate Fund (GCF) is a fund established within the framework of the UNFCCC to assist developing countries in adaptation and mitigation practices to counter climate change. **The GCF is based in the new Songdo district of Incheon, South Korea.**
- It is governed by a Board of 24 members and initially supported by a Secretariat.
- **The objective of the Green Climate Fund is to "support projects, programmes, policies and other activities in**

developing country Parties using thematic funding windows".

- It is intended that the Green Climate Fund be the centrepiece of efforts to raise Climate Finance under the UNFCCC.
- The Copenhagen Accord established during the 2009 United Nations Climate Change Conference (COP-15) in Copenhagen mentioned the **"Copenhagen Green Climate Fund"**.
- The fund was formally established during the 2010 United Nations Climate Change Conference in Cancun as a fund within the UNFCCC framework.
- Its governing instrument was adopted at the 2011 United Nations Climate Change Conference (COP 17) in Durban, South Africa.

NGT penalises Delhi

Why in news?

- The National Green Tribunal (NGT) on Monday directed the Delhi government to deposit an environmental compensation of Rs. 25 crore with the Central Pollution Control Board (CPCB) for failing to curb air pollution in the Capital.
- A Bench headed by NGT chairperson Justice Adarsh Kumar Goel said in case the State government failed to comply with the orders, a sum of Rs. 10 crore per month will be levied.
- Further, the Chief Secretary has been directed to prepare an action plan identifying the name of the persons responsible to execute and supervise the plan, and in case of failure, to bear the consequences.
- The Delhi government is at liberty to recover the cost of damage to the environment from its officers as well as from the polluters acting in violation of the law, the Bench added.

National Green Tribunal (NGT)

- The National Green Tribunal has been established in **2010 under the National Green Tribunal Act 2010.**
- It draws inspiration from India's constitutional provision of **Article 21, which assures the citizens of India the right to a healthy environment.**(Cases related right to healthy environment **M.C. Mehta v. Union of India(1988),Vellore Citizens Welfare Forum v. Union of India, Milk Men Colony Vikas Samiti v.**

State Of Rajasthan, Murli.S.Deora v. Union of India).

- It aims for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to the environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto.
- It has Original Jurisdiction on matters of “**substantial question relating to environment**” and & “**damage to the environment due to specific activity**” (such as pollution)

Legal jurisdictions of NGT:

- The NGT has the power to hear all civil cases relating to environmental issues and questions that are linked to the implementation of laws listed in Schedule I of the NGT Act.
- These include the following:
 1. The Water (Prevention and Control of Pollution) Act, 1974;
 2. The Water (Prevention and Control of Pollution) Cess Act, 1977; (yes, cess act)
 3. The Forest (Conservation) Act, 1980;
 4. The Air (Prevention and Control of Pollution) Act, 1981;
 5. The Environment (Protection) Act, 1986; (aka EPA)
 6. The Public Liability Insurance Act, 1991; (good option to confuse)
 7. The Biological Diversity Act, 2002.

Note:

- The NGT has not been vested with powers to hear any matter relating to the **Wildlife (Protection) Act, 1972, the Indian Forest Act, 1927** and various laws enacted by States relating to forests, tree preservation etc. Therefore, specific and substantial issues related to these laws cannot be raised before the NGT.

Principles of Justice adopted by NGT:

- The NGT is not bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.
- NGT is also not bound by the rules of evidence as enshrined in the Indian Evidence Act, 1872. Thus, it will be relatively easier for conservation groups to present facts and issues before the NGT, including pointing out technical flaws in a

Officers IAS Academy, Chennai project, or proposing alternatives that could minimize environmental damage but which have not been considered.

- While passing Orders/decisions/awards, the NGT will apply the principles of sustainable development, the precautionary principle and the polluter pays principle.
- Orders can be appealed to the Supreme Court within 90 days.
- NGT has power to enforce its orders. Ministry of Environment and Forest (MoEF) is merely an administrative Ministry for the National Green Tribunal to provide for means and finances. Once budget is provided, the Ministry cannot have any interference in the functioning of the National Green Tribunal.”

Hog deer

- The hog deer or Pada is an endangered species in the IUCN Red List and is protected under Schedule I of the Indian Wild Life (Protection) Act, 1972.

Range

- The western race is distributed from Pakistan and the terai grasslands (along the Himalayan foothills, from Punjab to Arunachal Pradesh),
- The eastern race of hog deer is found in Thailand, Indo-China, Laos, Cambodia, and Vietnam.

New findings

- A study has found that the western limit of hog deer is Manipur and not central Thailand as believed.

Significance of the finding

- Since the habitat of hog deer is shrinking in other countries, the genetically distinct and evolutionarily significant population found in Keibul Lamjao National Park (KLNP) is significant for conservation.

Keibul Lamjao National Park

- The Keibul Lamjao National Park is the only floating national park in the world. KLNP is a floating biomass/phumdis in Manipur's Loktak Lake.
- It is home to the last of the brow-antlered deer or Sangai one of the most endangered deer in the world. It is the state animal of Manipur.
- Loktak Lake was initially designated as a wetland of international importance under the Ramsar Convention in 1990 and

subsequently listed under Montreux Record in 1993.

Why in news?

- Researchers at Wildlife Institute of India, Dehradun reported presence of a small population of hog deer in Keibul Lamjao National Park (KLNP), Manipur.

Galapagos Giant tortoise

Overview

- The Galapagos giant tortoise are the largest living species of tortoise
- They exist only on two remote archipelagos: the Galapagos Islands, near mainland Ecuador, and Aldabra in the Indian Ocean.
- There are said to be 15 species of them, out of which 3 are extinct.
- The surviving species are classified as 'Vulnerable' by IUCN.
- The decline of species was caused by over-exploitation of the species for meat and oil, habitat clearance for agriculture, and introduction of non-native animals to the islands, such as rats, goats, and pigs.

A New Study

- In a recent study conducted on two species namely, Lonesome George, which is the last

Officers IAS Academy, Chennai known member of the subspecies *Geochelone nigra abingdoni* and Aldabra giant tortoise.

- The study revealed that the tortoises had a great number of gene variants which promote a healthy, full immune system, quick DNA repair and a natural defense against cancer.
- This has made these tortoises to live a long life of about 100 years on an average.

Extinct species

- Abingdon Island tortoise
- Floreana Island/Charles Island tortoise
- Pinta tortoise

International Union for Conservation of Nature (IUCN)

- The IUCN is the world's oldest and largest global environmental organisation working in the field of nature conservation and sustainable use of natural resources.
- It was founded in 1948. It is headquartered in Geneva, Switzerland.
- IUCN is best known to the wider public for compiling and publishing the IUCN Red List, which assesses the conservation status of species worldwide.

Culture

Sahitya Academy Award

- The Sahitya Academy Award is a literary honor in India, awarded annually by the Sahitya Akademi (India's National Academy of Letters)
- It is conferred on writers of the most outstanding books of literary merit published in any of the major Indian languages (24 languages 22 listed in the Eighth Schedule along with English and Rajasthani)
- It was established in 1954 and the award comprises of an engraved copper plaque, shawl and a cheque of rupees one lakh.

Why in news?

- Sahitya Akademi Award for 2018 was presented.

Swadesh Darshan

- Swadesh Darshan scheme is one of the flagship schemes of Ministry of Tourism launched in 2014-15.
- The objective of the scheme is to develop thematic circuits in the country in a planned and prioritized manner
- Under the scheme, 15 thematic circuits have been identified such as Buddhist, coastal, desert, eco, heritage, Himalayan, Krishna, Northeast, Ramayana, rural, spiritual, sufi, tirthankar, tribal and wildlife.

Why in news?

- The first ever Swadesh Darshan project was inaugurated in the state of Nagaland.

63rd Mahaparinirvan Diwas

What's in news?

- The 6th of December is the death anniversary of Dr BR Ambedkar.

Panchteerth

- Panchteerth are the tributes paid to Ambedkar by developing places associated with his life.
- Birthplace – Mhow, Madhya Pradesh
- Residence during studies – London, UK
- Place he embraced Buddhism – Deeksha Bhoomi, Nagpur
- Attained Parinirvan – Mahaparinirvan Sthal, Delhi
- Memorial – Chaitya Bhoomi, Mumbai

Dr BR Ambedkar

- Babasaheb Dr Bhimrao Ramji Ambedkar was a scholar, a social reformer and a leader who dedicated his life to eradicating social inequality in India.
- Babasaheb's family was from the Mahar community and he faced caste oppression.
- He launched a newspaper called "Mooknayaka" (leader of the silent) in 1920
- He was appointed to the Bombay Presidency Committee to work with the Simon Commission in 1925
- In 1932, the Poona Pact was signed between Dr. Ambedkar and Pandit Madan Mohan Malviya by which seats were reserved for scheduled castes within the general electorate
- In 1936, Babasaheb Ambedkar founded the Independent Labour Party,
- He served on the Defence Advisory Committee and the Viceroy's Executive Council as minister for Labour
- After independence, Babasaheb Ambedkar was appointed as the Union Law Minister and Chairman of the Constitution Drafting Committee

21st Mahaveer Awards

What's in news?

- Bhagwan Mahaveer Foundation gave away Mahaveer awards to honour individuals and institutions who were undertaking activities of selfless service for the welfare of the society.

Mahaveer

- Mahavira, also known as Vardhamāna, was the twenty-fourth tirthankara of Jainism.
- This ancient religion is believed to have 24 Trithankaras/teachers (Jinas). The 1st Trithakara was Rishabdev or Rishabhath.
- The 23rd Trithankara was Parshavnath and the last was Vardhamana Mahavira (Born in 540 BC at Kundangrama, near Vaishali).
- The three principle or Triratnas of Jainism
 1. Right faith
 2. Right Knowledge
 3. Right Conduct which includes observance of five vows: ahimsa (non-violence), satya (truth), asteya (no stealing), parigraha (no acquiring property) and brahmacharya (abstinence)

Miscellaneous

Tributes to Former President

Why in news?

- The President of India, Shri Ram Nath Kovind, paid floral tributes to **Dr Rajendra Prasad, the first President of India** (3rd Dec) & **Shri R. Venkataraman, former President of India**, (4th Dec) on their birth anniversaries at Rashtrapati Bhavan.

Facts about Rajendra Prasad: (1884-1963)



- A lawyer by profession, Dr Prasad had been an influential leader during the Indian freedom struggle.
- He left his law practice to join the movement along with Mahatma Gandhi and Jawaharlal Nehru.
- Rajendra Prasad **joined the Indian National Congress in 1911 and became a leader of the Bihar and Odisha region.**
- **Prasad played a major role in forming the Bihari Students Conference in the year 1906 at the Hall of Patna College.**
- He served as the president of the **Constituent Assembly that drafted the first constitution of the Republic of India, which lasted from 1948 to 1950.**
- He also became the **first Minister of Food and Agriculture in 1946** in the interim national government
- The British governance had jailed Prasad many times. He **was arrested for his support in the Salt Satyagraha Movement of 1931 and the Quit India Movement of 1942.**

- He was unanimously elected as the President of India at the last session of the Constituent Assembly of the interim government.
- Selected as the **President of the Quetta Earthquake Relief Committee.**

Facts about Shri Venkata Raman: (1910-2009)



- A lawyer by profession, R Venkataraman had practiced law in the Madras High Court and in Supreme Court.
- **Venkataraman was a freedom fighter. He was a part of the Quit India Movement.**
- Venkataraman was a **member of the Parliamentary delegation to the Commonwealth Parliamentary Conference in New Zealand in his legislative years.**
- During this time, **he initiated India's first missile programme, named 'Integrated Guided Missile Development Program', and appointed APJ Abdul Kalam as the programme head.**
- Venkataraman became the Vice President of India on August 31, 1984.
- On July 25, 1987, R Venkataraman was sworn-in as the **eighth President of the Republic of India.**
- R Venkataraman received many honours from different parts of the world. He was a **receiver of Tamra Patra for his contributions in India's freedom struggle.**

News in-depth

General Studies-1

Stunted and wasted

Introduction:

- Global Nutrition Report, 2018 was released by IFPRI on Nov 2018. According to the report India is facing a major malnutrition crisis as it holds almost a third of world's burden for stunting.

Highlights of the report:

- Global burden of malnutrition "remains unacceptably high and progress unacceptably slow".
- Under-nutrition accounts for around 45% of deaths among children under five in low- and middle-income countries.
- Overweight and obesity has led to around 4 million deaths and 120 million healthy years of life lost across the globe, with around 38.9% adults found to be overweight.
- Among children under five years of age, 150.8 million are stunted, 50.5 million are wasted and 38.3 million are overweight; while 20 million babies are born underweight each year, it says.
- The impact of malnutrition on global economy is close to US\$3.5 trillion per year, with obesity alone costing US\$500 billion per year.
- A major section of the study looks at the quality, nutrient content and type of food consumed across the globe. The results suggest a disparity between developed and emerging markets, says the report.
- The report says that regardless of wealth, school-age children, adolescents and adults are consuming too many refined grains, sugary foods and drinks, and not enough fruits, vegetables and whole grains.

Where India stands?

- India holds almost a third (31%) of the global burden for stunting, the prevalence of which differs from state to state. As per the UNICEF, stunting, or low height for age, is caused by long-term insufficient nutrient intake and frequent infections.

- Stunting varies greatly from district to district (12.4% to 65.1%), with 239 of 604 districts accounting for stunting levels above 40%. The differences between districts were a result of multiple factors, including gender, education, economic status, health, hygiene, and other demographic factors.
- India is the country with the largest number of children who are stunted at 46.6 million, followed by Nigeria (13.9 million) and Pakistan (10.7 million). The urban prevalence of stunting on average 19.2% compared with 26.8% in rural areas.
- While wasting, or low weight for height, affects a greater proportion of rural children than urban. India again tops the list with the most number of wasted children at 25.5 million, followed by Nigeria (3.4 million) and Indonesia (3.3 million).
- India is also among the countries with more than a million children who are overweight. As part of the report, a case study in Rajasthan found that key areas of infant and young child feeding and micronutrient supplementation were underfunded.

According to UNICEF:

- Stunting, or low height for age, is caused by long-term insufficient nutrient intake and frequent infections. Stunting generally occurs before age two, and effects are largely irreversible.
- Wasting, or low weight for height, is a strong predictor of mortality among children under five. It is usually the result of acute significant food shortage and/or disease.
- Malnutrition is a condition that results from eating a diet in which one or more nutrients are either not enough or are too much such that the diet causes health problems. It may involve calories, protein, carbohydrates, vitamins or minerals.
- Underweight is below the normal weight.

Way forward:

- This shows the important role played by political commitment, administrative efficiency, literacy and women empowerment in ensuring the child's health.
- Food and freedom goes together. Social institutions can work to improve nutrition and children's welfare.
- We need to focus on the quantity and quality of the food provided in Anganwadi centres and ICDS.
- The latest report on stunting should convince centre that it needs to understand the problem better and work with state's to give Indian children a healthy future.

Secular Democracy at peril

Introduction:

- India is literally at a critical situation with the very future of its secular democracy at stake.
- Indian politics today reminds one of the first decade of the existence of Pakistan.
- With five important State Assembly elections in various stages of completion and the general election around the corner, the political temperature is at boiling point.
- Competitive Hindutva has become a important agenda in the political manifesto.

Rising threat to secularism:

- Secularism in India means equal treatment of all religions by the state.
- The well-established secular norm of not overtly using religion for electoral gains is now a thing of the past, which is undermining the rule of law and threatening the democratic fabric of India.
- The rising support of important political parties for the building of Ram temple in Ayodhya is an example.
- What started as a property dispute has thus been turned into a matter of faith beyond the purview of the courts.
- Populism rather than liberal democracy is increasingly coming to define the nature of the Indian polity.

The opposite of patriotism:

- Ultra-nationalism (ultra-nationalism is defending one's country even when it is committing horrific acts to its own citizens) has become very popular.

- Politicians regularly engage in such debates on TV channels, some of them retired military officers, which is worrying.
- This trend does not show patriotism but rather ultra-nationalism and majoritarianism.

Becoming like Pakistan:

- The current trend of Indian politics reminds one eerily of the first decade of the existence of neighbouring Pakistan.
- Mounting majoritarianism fuelled by religious intolerance, hyper-nationalism born out of insecurity, deliberate erosion of political and judicial institutions, and creeping military intervention in the political arena finally led to the first military coup in Pakistan in 1958.
- This paved the way for a succession of military takeovers. One of these resulted in the division of Pakistan in 1971 and another in the creation of terrorist outfits in the 1980s that continue not only to threaten India and Afghanistan but also to tear apart Pakistan's social fabric.
- Pakistan has never recovered from the tragic errors committed in its early years and is paying a very high price for it today.

Way forward:

- This trend of politics has to be checked immediately. People on their part need to be aware that these calls are all for vote bank and not for welfare.
- The founding fathers envisioned a diversified, secular India and shaking the roots of secularism will shake the huge democratic tree of India.

End this long trauma

Introduction:

- Fifteen crore individuals, better known as the Denotified Tribes (DNT) of India, continue to be considered 'criminal by birth'.
- It is time to repeal the Habitual Offenders Act, which has only ended up re-stigmatising marginalised communities.

Who are de-notified tribes?

- The term, 'De-notified and Nomadic Tribes', can be traced to the Criminal Tribes Act (CTA) of 1871.
- The colonial government notified nearly 200 tribal communities to be hereditary criminals, cementing their societal identity as outcasts and subjecting them to constant harassment by the administration.

- Though some of the tribes followed loot and plunder as the habitual community profession, British largely used this act to suppress the tribes to exploit the forest resources.
- After India gained Independence, these tribes were 'de-notified' from the list of Criminal Tribes, and hence the term.

Pitfalls in Habitual Offenders Act:

- In independent India that the need was felt to shift the collective burden of criminality to the individual, which led to the CTA being repealed and the Habitual Offenders Act (HOA) being enacted in various States.
- However, the HOA functioned as a mere extension of the CTA. Nomadic and semi-nomadic communities continued to face harassment at the hands of law enforcement agencies.
- Certainly, the mere repeal of the CTA could not change the mind-set of government officials or members of society.
- The fact is that even in the 21st century, DNTs continue to face discrimination by society at large.
- Given their centuries-old tradition of constant movement, they often do not possess any residential proof, which leaves them out of the majority of the government's developmental schemes.
- Those deemed eligible for such schemes were randomly grouped under the Scheduled Castes, Scheduled Tribes or Other Backward Classes categories.
- As a result, most members of the DNTs continue to be out of the orbit of steps being taken to end discrimination.

What were the measures taken?

- The first National Commission for Denotified, Nomadic and Semi-nomadic Tribes (NCDNT) was constituted in 2003.
- It was reconstituted two years later under the chairpersonship of Balkrishna Renke, which submitted its report in 2008.
- The NCDNT report clearly recommends repealing the various HOAs.
- The recommendations found an echo in the **Idate Commission**, constituted with the similar mandate in 2015.
- However, the Idate Commission Report lacks the scientific data necessary to introduce reforms to address the plight of DNTs

Way forward:

- However, it is important to learn from previous mistakes. A mere repeal of the law will not address their need for establishing society-wide changes to gain access to political-social-economic welfare.
- Thus, the repeal of the HOA has to be accompanied by a slew of legal reforms to address the multitude of issues DNT communities face.
- Their unique lifestyle requires positive affirmation and development policies that cater to their long-standing and overlooked needs.
- It should be the duty of the government to be proactive and reach out to the DNTs since the latter would understandably refrain from seeking state help.
- As the sun sets on the 16th Lok Sabha, let us ensure that it also marks an end to the oppression of the nomadic and semi-nomadic tribes of India.

General Studies-2

Two Punjabs, one South Asia

Problems between Ind-Pak

- India and Pakistan relations have been a major concern to the world. Their flickering relations not only were benevolent to them but also to the entire south Asian region.
- In the dire to conserve their ultra-nationalism hunger over 70 years, they have forgotten what they have lost in terms of economic perspective.
- Both the countries have been spending on militaries to protect from each other. The regions like Punjab, Kashmir, and Sind which in pre-independence era so prospective now have lost their viability just due to ultra-nationalism looks.
- Due to Medias' one-sided stories people are instigated with fear and agony regarding neighbouring country.
- Leaders on the both sides are not actively involved in resolving which can attain peace. For Eg: PM Modi since 2016, refusing to attend SAARC meeting to be held at Islamabad.

What is Track 2 diplomacy?

- Track Two Diplomacy is having unofficial, informal interaction between members of adversary groups or nations that aim to develop strategies, to influence public opinion, organize human and material resources in ways that might help resolve their conflict.

Track III:

- These are talks among nations at Business, or Peace-making through **Commerce**. This is the field of business and its actual and potential effects on peace-building through the provision of economic opportunities, international friendship and understanding, informal channels of communication, and support for other peace-making activities.

Why in News?

- Development of Kartarpur Corridor.

Way forward:

- Both countries think by separating state and people empathetically to understand the needs to bring unity and stability.
- Connectivity of the region must be regained to establish a stronger South Asian region.

- Concepts like Punjab-Punjab formula (both Pak Punjab and Indian Punjab helping each other), track II and track III diplomacies should be evolved to instil confidence among people across the borders.

Make planning fashionable again

Introduction:

- Economic planning is not considered fashionable today.
- As it is well known, India under Nehru's leadership inaugurated a strategy for industrialisation of the country in the early 1950s.
- This involved the setting up of public sector units (PSUs) in diverse areas of manufacturing; research institutions in cutting-edge technologies of the time such as space and atomic energy; and centres of higher learning, including the Indian Institutes of Technologies (IITs).
- All of these by a poor country, which was still struggling to find its feet amidst the multiple blows it had to endure during the early years after Independence.
- The withdrawal of the Indian state from economic decision-making has had consequences on industry.

Challenging the orthodoxy:

- It was an orthodox belief of the economists that countries should develop industries based on their comparative advantage.
- According to this theory, a labour-surplus country like India should be limiting its industrial development ambitions to labour-intensive sectors, such as garments or leather.
- Even British has cautiously used this theory of comparative advantage in India, which led to drain of wealth in India.
- So by consciously entering into sectors such as machine building and nuclear research, which needed capital and technology more critically than labour, India was also challenging a deeply held orthodoxy in economic theory.

Leading by the Indian planning:

- The programmes launched in India from the 1950s became a model for other developing and Third World nations and the evolution of development economics as an important sub-discipline.

- The foundation for the present diversified economy was laid during the era of planning.
- The present success of India in IT and service sector is due to investment during the early decades.
- But planning started diminishing at 1990's with LPG (Liberalisation Privatisation and Globalisation) reforms.
- This sudden change distorted the slowly evolving planning and largely hit the manufacturing sector.
- India is today one of the largest markets in the world for a wide range of goods, whether passenger cars, mobile phones or food products.
- Despite the emergence of such a large domestic market, the imports of machinery, transport equipment, electronic goods and all their components have been rising continuously in India from the 2000s onwards.
- The trend has not change despite the government effort like "Make in India".

Planning in a globalised world:

- Planning is not incompatible with markets and globalisation.
- The success of East Asian countries like South Korea in manufacturing is due to strategic planning.
- Take the example of China, which is gradually shifting its economic base from low-wage industries, and is now emerging as a global leader, even ahead of the U.S., in several new technologies, including artificial intelligence and renewable energy. These Chinese achievements owe much to the careful planning.

Way forward:

- India is facing a he employment challenge of almost 15 million labour force waiting to be absorbed.
- It cannot be resolved with the technologies that foreign companies bring into India, which tend to be labour saving.
- What India requires, on the other hand, are technological advances that create new economic opportunities and absorb and not displace labour.
- India's research institutions and our PSUs should create a plan that would create enthusiasm among young and educated entrepreneurs from rural areas to make use of these technologies to create new jobs.

- And, for all these, planning should be brought back to the centre of our economic discussions.

An invitation to corruption

Introduction:

- The government in the union Budget 2017-18 brought the electoral bond scheme with a promise to end corruption in the election process. But the current scenario does not prove the same.

What are electoral bonds?

- The bonds are bearer instrument in nature of promissory note and interest-free banking instrument.
- These electoral bonds can be bought for any value in multiples of Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh or Rs 1 crore after fulfilling all existing Know Your Customer (KYC) norms and making payments from bank account.
- It will not carry name of payee.
- The bond deposited by any eligible political party to its account shall be credited on the same day.
- Eligible political parties can encash electoral bonds only through their bank accounts.
- Electoral Bonds may be purchased by **only citizen of India**.
- An individual can buy Electoral Bonds, either singly or jointly with other individuals.
- Electoral Bonds are valid for fifteen calendar days from the date of issue.
- Only registered political parties, that have secured not less than 1% of votes polled in last election of Lok Sabha or legislative assembly of state, will be eligible to receive electoral bonds.
- The cash donation has been capped at Rs. 2000 and beyond that donations are via electoral bonds.

Why electoral bonds are considered to be a failure:

- The fact that the scheme allows for **complete anonymity of the donor**. Neither the purchaser of the bond nor the political party receiving the donation is mandated to disclose the donor's identity.
- Therefore, not only will, say, the shareholders of a corporation be unaware of the company's contributions, but the voters too will have no idea of how, and

through whom, a political party has been funded.

- The programme removes an existing condition that had prohibited companies from donating anything more than 7.5% of their average net-profit over the previous three years. This now means that **even loss-making entities can make unlimited contributions.**
- Additionally, the requirement that a corporation ought to have been in existence for at least three years before it could make donations, a **system that was meant to stop shell companies, has also been removed.**
- It violates the **fundamental rights to equality and freedom of expression.**

Officers IAS Academy, Chennai

When the power of that vote is diluted through opacity in political funding, democracy as a whole loses its intrinsic value.

Way forward:

- The corporate's limitation of fund to 7.5% profit and existence of company for 3 years can be brought up again.
- Though the anonymity of the voters can be maintained it can be brought under the scrutiny of the election commission.
- The electoral bond funds can be pooled together and then funded based on the votes in previous election.
- At the last resort state funding of election can be adopted to ensure free and fair elections.

General Studies 3

Mangroves mitigated Gaja's impact

Why in news?

- Muthupet in Tiruvarur district was among the coastal towns that faced the wrath of Cyclone Gaja. But considering the extent of the damage elsewhere, this town seems to have been spared the worst, thanks to its mangrove forests.
- Mangroves functioned as a shield and broke the velocity of wind and this is not the first time mangroves saved a disaster-prone area. When a tsunami struck Tamil Nadu in 2004, they helped contain the damage in Pichavaram in Cuddalore district.

About the mangroves

- Mangroves represent a characteristic **littoral (near the sea shore) forest ecosystem**.
- These are mostly evergreen forests that grow in sheltered low lying coasts, estuaries, mudflats, tidal creeks backwaters (coastal waters held back on land), marshes and lagoons of tropical and subtropical regions.
- **Mangroves grow below the high water level of spring tides. The best locations are where abundant silt is brought down by rivers or on the backshore of accreting sandy beaches.**
- **Mangroves are highly productive ecosystems and the trees may vary in height from 8 to 20 m. They protect the shoreline from the effect of cyclones and tsunamis.**
- They are breeding and spawning ground for many commercially important fishes.
- Since mangroves are located between the land and sea they represent the **best example of ecotone**. (An ecotone is a zone of junction or a transition area between two biomes (diverse ecosystems). It is where two communities meet and integrate. Eg: **grassland** (between forest and desert), **estuary** (between freshwater and saltwater) and **river bank or marsh land** (between dry and wet).
- Mangroves are shrubs or small trees that **grow in coastal saline or brackish water**. Mangroves are salt tolerant trees, **also called halophytes**, and are adapted to life in harsh coastal conditions.

- Mangrove vegetation facilitates more water loss. Leaves are thick and contain salt secreting glands. Some block absorption of salt at their roots itself.
- They contain a complex salt filtration system and complex root system to cope with salt water immersion and wave action. They are adapted to the low oxygen (anoxic) conditions of waterlogged mud.
- They **produce pneumatophores (blind roots) to overcome respiration problem in the anaerobic soil conditions**.
- **Mangroves occur worldwide in the tropics and subtropics, mainly between latitudes 25° N and 25° S.**
- **They require high solar radiation to filter saline water through their roots. This explains why mangroves are confined to only tropical and subtropical coastal waters.**
- Mangroves occur in a variety of configurations. Some species (e.g. Rhizophora) send arching prop roots down into the water. While other (e.g. Avicennia) send vertical "Pneumatophores" or air roots up from the mud.

Mangroves in India:

- In world's total mangroves vegetation India's share stands at 3%. Sundarban in West Bengal accounts half of the total area.
- West Bengal (2160 sqkm), Gujarat (1107 sqkm), Andaman & Nicobar (617km²), Andhra Pradesh (367km²), Odisha (231km²).

Cutting through the smog

Introduction:

- Incidents of stubble burning following the harvest of paddy crop in Punjab and Haryana cannot be averted by imposing fines, or giving notice or giving farmers' capital subsidy. Instead, the issue requires long-term vision and strategic policy interventions.

What is Stubble burning?

- Stubble burning is a common practice followed by farmers to prepare the field for sowing of wheat in November as there is little time left between the harvesting of paddy and sowing of wheat.

Reasons for farmers to choose stubble burning:

Policy of rotation:

- In the 1960s, wheat-paddy crop rotation was encouraged in Punjab and Haryana to make India self-sufficient in food grain production.
- Large public investments in irrigation and adoption of high yielding varieties under the Green Revolution helped achieve the goal and make the nation food secure.
- However, the negative externalities in terms of land degradation, adverse soil health due to overuse of fertilizers and pesticides, and plummeting water tables have surfaced.
- The share of paddy (rice) in the gross cropped area in Punjab has increased from 6.8% in 1966-67 to almost 36.4 % in recent years, while it has increased from 4.97% to 20% in Haryana. The increase has undisputedly been at the cost of the area under maize, cotton, oilseeds and sugarcane.
- The policy of minimum support price for crops, in tandem with their assured procurement and input subsidy, has left farmers with no option but to follow this rotation.
- Besides, Punjab enacted a water conservation law in 2009 which mandates paddy sowing within a notified period (sometime in June instead of the earlier practice in May).
- A shorter period of sowing days prohibits transplantation before a notified date, which in turn limits the window available for harvesting paddy to between 15 and 20 days.
- As a result, farmers who are pressed for time to sow wheat and maintain crop yield find stubble burning to be an easy and low-cost solution.

Other reasons:

- **Burning of Rice straw and wheat residue is not necessary for the farmers because of the availability of technology and its higher economic value as dry fodder.**
- Even though farmers are aware that the burning of straw is harmful to health, they do not have alternatives for utilising them effectively.
- The farmers are ill-equipped to deal with waste because they **cannot afford the new technology** that is available to handle the waste material.

- Experts say that **with less income due to crop damage, farmers are likely to be inclined to light up their fields to cut costs and not spend on scientific ways of stubble management.**
- It costs Rs 1,500-3,000 per acre for stubble management, depending on the equipment and method.

Happy Seeder:

- Happy Seeder is one of the unique techniques which is used for **sowing wheat without any burning of rice residue.** This technology is eco-friendly with environment for the health of soil as well as it also saves water.
- Farmers have already made investments in seed drill machines for sowing wheat after paddy harvest.
- Increasing pressure by the government on farmers to purchase the **'happy Seeder' to abate stubble burning adds to the cost incurred by farmers.**
- Even if the machine is available at a subsidised rate of nearly ₹1 lakh, it would remain idle the whole year and become a liability in terms of maintenance.
- It is not a viable option for small and marginal farmers who hardly earn ₹60,000 in a year.
- Imposing a fine for burning straw is again unreasonable. The fine imposed per hectare is much lower than the cost incurred on a 'happy Seeder'.

Impact of stubble burning:

- It is mainly carried out in **Haryana and Punjab.**
- **Open burning of husk produces harmful smoke that causes pollution and it is incomplete combustion in nature.**
- Hence large amount of toxic pollutants are emitted in the atmosphere. Pollutants contain harmful gases like Methane, Carbon Monoxide (CO), Volatile organic compound (VOC) and carcinogenic polycyclic aromatic hydrocarbons.
- **Clouds of ash and smoke can travel more than thousand kilometers and create an obstinate and non-clearing clouds.**
- Smog formed of the smoke can increase the levels of pollutants by manifolds in the air, making it difficult to breathe.
- After release in the atmosphere, these pollutants disperse in the surroundings, may undergo physical and chemical

transformation and eventually adversely affect the human health.

Alternative solutions:

- A feasible remedy could lie in the setting up of custom hiring centres or inviting companies to make investments for rental purposes.
- If the state provides an app-based support system, to rent out tractors and farm implements and earn additional income, there are examples of this in Nigeria and also in **Rajasthan**, Madhya Pradesh, Gujarat, Uttar Pradesh and Bihar, it would be akin to the 'Urbanisation of agriculture'.
- It would avoid stubble burning and at the same time make farming more mechanised, cost effective and a source of employment.
- Another far-sighted approach could be in effective use of paddy straw. Unlike wheat residue, which is used as fodder, paddy straw is non-palatable to animals as it has high silica content.
- The available paddy straw can be effectively used for power generation, which will go a long way towards overcoming the problem of disposal of crop residues and power deficit in the region.
- Farmers, who have already been sensitised to refrain from burning residue, should be given options such as biomass generation. Now, hardly 20% of straw is managed through biomass power plants, paper and cardboard mills.

Conclusion:

- Crop residue fires in Punjab and Haryana are enhancing concentrations of toxic gases like benzene and toluene, according to research from Indian Institute of Science Education and Research (IISER).
- The cancer risk would be even higher for farmers and villagers closest to the fields, the study said, adding that mitigating crop fires could reduce these risks.
- **Blaming only the farmers may not solve the problem of air pollution and there is a need to find sustainable technological solutions.**
- It is important to diagnose and address the fundamental problems that force the farmers to burn the paddy straw on the field and not utilise it for any productive purpose.

Way-forward:

- The government should use **geospatial techniques to identify areas where**

stubble burning is severe and encourage installation of biomass plants at such locations.

- This will not only reduce transportation costs for the firm or village entrepreneurs but also help the government achieve its target of generating 227GW based on renewable energy sources by 2022.
- Farmers can also be **incentivised to sell the residual for additional income.** The residual has uses, such as in paper, cardboard and packing material making and also hydro seeding (de-fiberized rice straw can be used in hydro seeding for erosion control).
- There is also a **need to develop rice varieties that are both rich in grain yield and high in straw quality.** Use of such dual-purpose rice varieties will help to maintain food security, farm income and improve environmental sustainability.
- **There needs to be a proactive engagement to both persuade and reassure farmers.**
- The greater availability of machines and the zero-tolerance policy need to be seen as works in progress to derive lessons on how to refine the crop-clearing process in an ecologically sound manner.

A new deal for the farmers

Introduction:

- According to Census 2011, 54.6 per cent of India's workforce was engaged in agriculture. However, the sector contributes less than 17% of the GDP. The policies of successive governments have failed to correct this imbalance.
- The policies of successive governments have failed to correct this imbalance.

Centre for the Study of Developing Societies report:

- A report prepared by the Centre for the Study of Developing Societies, released in March 2018, based on a survey of 5,000 farm households across 18 states, revealed that 76 per cent farmers would prefer to do some other work than farming.
- It says that only 10% of the poor and small farmers with average land holding of 1-4 acres have benefited from government schemes and subsidies.
- Seventy per cent of those interviewed alleged they did not get any information or

advice regarding farm practices from agriculture department officials.

Survey analysis:

- The survey shows that 62 %of interviewed farmers were unaware of the Minimum Support Price (MSP).
- 70% had not heard about the Direct Cash Transfer scheme(DBT).
- The Indian farmer needs immediate help. Any further delay will only increase his suffering and lead to greater unrest.
- Farmers must receive expert advice by trained officials at their doorstep at the beginning of every crop season regarding all issues like which crops to sow, technology, market prices, soil fertility, irrigation
- Agricultural extension services are almost non-existent today.
- Trade bans on agricultural exports must be removed, since such restrictive policies keep domestic prices low, harming farmers' interests.
- Farmers should have free access to global markets, as it will help augment incomes.
- As for domestic trade, all restrictions on inter-district and inter-state movement should be removed.
- Every farmer family must have a Kisan Credit Card (KCC).
- According to the NABARD, the cumulative number of KCCs issued since inception till March 31, 2015, is 14.64 crore of which operative/live KCCs are 7.41-crore.

Kisan credit card scheme (KCC)

- Introduced in **1998-99** to fulfil the financial requirements of the farmers at various stages of farming through institutional credit.
- As a result, the model scheme was prepared by NABARD on the recommendation of **R.V Gupta committee**.
- Kisan Credit Card is **valid for 5 years** subject to annual review and performance of the borrower.
- **Eligibility:** Small and marginal farmers, Sharecroppers, Lessee and tenant farmers, the Self Help Groups (SHGs) or Joint Liability Groups (JLGs).
- In case of credit limit above Rs. 1 lakh, beneficiary has to pledge the crops or pledge his land as mortgage. However, collateral security may be obtained at the discretion of bank in some cases.

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- KCC scheme is being implemented by the all Co-operative banks, Regional Rural Banks and public sector banks throughout the country. NABARD monitors the scheme in terms of the Cooperative Banks & RRBs and RBI in respect of Commercial Banks.
- A new feature is started in the KCC scheme by the RBI and NABARD which **provides ATM card to farmers** which can be used at all ATMs and point of sale terminals.

Paani Panchayat:

- It is a model of groundwater management – A presentation by ACWADAM (Advanced Centre for Water Resources Development and Management)
- Pani Panchayat is a voluntary activity of a group of farmers engaged in the collective management (harvesting and distribution) of surface water and groundwater (wells and percolation tanks).
- Pani Panchayat is the name first given to a movement by **Mr. Vilasrao Salunke** for motivating farmers of Naigaon village of the drought-prone Purandhar taluka of **Maharashtra** in 1974.

Solution:

- According to the Standing Committee on Rural Development, only 10%of the projects taken up under the watershed development component of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) have been completed so far.
- Rainwater harvesting should be incorporated in irrigation projects, owing to its magnificent untapped potential.
- The establishment of micro, small and medium irrigation projects like tubewells and check dams, instead of big irrigation projects. Such projects should be financed entirely by the Centre.
- A **“Paani Panchayat”** should be established for every scheme, which will act as a specialised registered body responsible for the execution of irrigation projects.
- Every small and marginal farmer and every agricultural labourer above the age of 60 should receive a monthly pension of Rs 5,000.
- Fertiliser subsidies should be provided to the farmers via direct benefit transfer. A separate dedicated electricity line should be extended to all farmers by state governments in order to reduce their input

costs and to ensure the regular supply of electricity to farms.

Way-forward:

- There should be a separate category of entrepreneurs under the Mudra Yojana who will set up processing and storage plants for agricultural units.
- All small and marginal farmer households, including tenant and sub-tenant farmers, should receive a basic income of Rs 6,000 per acre per crop season.
- There should be a one-time waiver of farmers' loans up to Rs 2 lakh across India. All political parties should adopt this as a commitment in their manifestos in the coming Lok Sabha election.
- We have neglected the Indian farmer for 70 years; it is now time to make up.

Shift to low carbon

Why in news?

- Both rich and poor countries have faced extensive damage from storms and heatwaves this year.
- As climate representatives meet in Poland for the Conference of the Parties 24, the crucial question is whether carbon emissions will be reined in to avert further damage due to climate change.

Effects of GHG:

- Greenhouse gas emissions, of which carbon dioxide is the biggest component, make the earth warmer and lead to more heatwaves.
- A study in the journal Scientific Reports found that the decadal mean of daily maximum temperature for April and May in the 2010s is 40-42°C over large parts of India.
- Warmer air holds more moisture, which results in more intense rainfall and provides more energy for storms.
- Climate scientists attribute the rising trends in flooding and heatwaves to human-induced climate change.
- In India, rains, floods and landslides in Kerala have killed 373 people since May 30 in 2018.
- Uttar Pradesh, Karnataka and Assam were battered by floods in 2018, as was Chennai in 2015. Meanwhile, Delhi, Rajasthan, Andhra Pradesh, and Telangana, among other States, experienced heatwaves.

Feasible solution:

- In the absence of a shift to a low carbon economy worldwide, the average

Officers IAS Academy, Chennai temperature could rise by more than 2°C by the end of this century.

- Hotter, longer summers and excessive rainfall in some areas and droughts in others will damage crops.
- Warm coastal waters will turn unsuitable for certain species of fish.
- Adapting to a changing climate is one part of the agenda. Japan has invested a lot of money on coastal defences.
- Japan has built the world's largest underground flood water diversion facility.
- With a coastline of about 7,500 km, most of which is low-lying, India cannot make such colossal (extremely large) investments.
- Better early warnings and timely evacuations have had huge pay-offs, the most striking example being the massive relocation of people from the coasts of Andhra Pradesh and Odisha before Cyclone Phailin struck those areas.

Way forward:

- The adaptation will not suffice unless mitigation takes central stage among the world's leading emitters, including India.
- The country has committed to cuts in carbon emissions consistent with a 2°C temperature rise. But plans to build new coal-fired power plants need to be abandoned and replaced with a massive ramp-up of wind and solar power.
- India's stakes in a low carbon world economy are among the highest as it is on the front line of climate disasters and is also a leading contributor to greenhouse gas emissions.
- Apart from taking steps to adapt to climate change, India's voice in decarbonising the world economy is vital.

Job creation at the farmer's doorstep

Introduction:

- The **Telangana** government's announcement of the **Rythu Bandhu scheme** has spotlighted the policy of utilising cash transfer to assist land-owning farmers with a non-agricultural income instead of the traditional policy measures of price interventions, trade restrictions and farm loan waivers.
- The **scheme is nominally intended as investment support for inputs such as seeds and pesticides.**

- It implies a transfer of ₹8,000 per acre for every landowning farmer over two crop seasons.

Analysing the economic situation:

- Rural India's economic situation continues to worsen.
- **NABARD (All India Rural Financial Inclusion Survey)** shows that the average monthly income of rural households is ₹8,059, with agricultural households deriving only 43% of their income from agriculture; most of it is from providing daily wage labour and government jobs.
- While agricultural households typically had a higher income than non-agricultural households, they had higher debt on average (₹1,04,602 and ₹76,731, respectively).
- This is also reflected in the decoupling of urban Indian incomes from rural India with per capita income in rural India lagging a fair bit.
- **The government has sought to double farmer income by raising minimum support prices, but such initiatives would apply directly only to 48% of rural India, with non-agricultural households being left behind.**
- Perhaps we need to look at alternative sources of income.

Diversification is the key:

- The conversation on raising farmer income needs to embrace **non-farm diversification**, an important **pathway for empowering landless labourers and marginal farmers**, as development economist Daniel Coppard recommended in a 2001 report.
- Diversification, away from marginal farming, is typically the answer as a few papers on the subject show (Adams and He, Lanjouw, Janvry, and Reardon).
- It **helping to overcome land constraint to income growth, while allowing farmers to cope with exogenous shocks through additional income.**
- In some cases, it **'even allows them to reinvest in productivity enhancing agricultural technologies'**. Within this, there are two key sectors, where appropriate reforms can lead to significant income support for marginal farmers.

Opportunity in livestock:

- The livestock sector can offer significant opportunities for bolstering non-farm income.
- The current breeding policy (based on exotic blood and artificial insemination) needs to be revamped. A national breeding policy is also needed to upgrade the best performing indigenous breeds.
- Buffalo breeding ought to be given more attention, while poultry breeding should be focussed on conservation.
- State governments should be encouraged to participate in national breeding policy implementation, creating an environment for competition among alternative suppliers of artificial insemination. Consensus must be built among breeders to develop indigenous breeds.
- The feed supply (currently inadequate) needs to be mitigated through greater imports, with feed technology packages developed for extension dissemination.
- Geographical information system-based analysis must be utilised to map production systems.
- Private investment must also be encouraged. Animal health care should become a priority, with greater investment in preventive health care.
- The government needs to create better incentive structures for investment in livestock in the States that are lagging while harmonising rules, regulations and regulatory authorities across States.
- State governments should sponsor research and assessment of the market, along with highlighting investment potential.

Focus on migrant workers:

- We should also embrace the fact that agricultural labourers routinely seek construction-related daily wage labour to bolster their income.
- Improving the conditions of migrant workers in the construction sector requires a multi-pronged approach.
- First, we have to enable migrant workers to get deserved access to various government (Central and State) schemes, despite the lack of identity proof.
- Access to Anganwadi facilities should be provided regardless of their identity documents. While multiple laws exist for the welfare of construction workers, compliance is abysmal. The penalties for

non-compliance have to be increased to a significant fraction of the construction cost, payable by the builder.

- Registration of workers with the Welfare Board should be made mandatory and be the responsibility of the contractor and the builder.
- If the contractor is found to engage or employ any worker without a registration card/ID, penalties (monetary and non-monetary) should be imposed, which would then be used for improving awareness and penetration of registration cards and their benefits.
- The registration cards should be linked to their Jan-Dhan accounts, and transfer of payments on a periodic basis be made directly to their accounts. The condition of women, strict anti-harassment laws should be implemented.
- Creche facilities at construction sites should be provided to also ensure that children are not neglected; they often play with gravel and dust, which can threaten their health.
- Utilisation of a construction cess has to be improved if we are to make any difference to the lives of our construction workers.
- Workers should also be provided with training and skilling in their areas of interest, as it could lead to higher earnings and credit-worthiness.

Way forward:

- Government policies should help create sustainable, long-term, rural, non-farm employment options which can aid the rural poor in overcoming barriers to economic prosperity.
- India's rural development policies should increasingly focus on developing markets, infrastructure and institutions that can help sectors such as livestock and construction growth.
- While **India's post-Independence rural policy has primarily been about driving people away from agriculture and towards cities, we must now incentivise job creation at their doorstep.**

Uneasy fields: On Kisan Mukti Morcha

Introduction:

- Tens of thousands of farmers reached Delhi for a two-day Kisan Mukti Morcha and held the country's attention.
- They sought a special 21-day Parliament session to discuss the crisis in India's agrarian economy.
- Their key demands included an unqualified loan waiver to mitigate indebtedness levels in farm households and better remuneration for their produce instead of promises on paper of high minimum support prices.
- These broad demands sum up the precarious livelihood of a majority of farmers who work on small, fragmented land holdings.

Reasons:

- With rural distress palpable, elections for five State Assemblies under way, and the Lok Sabha election just about six months later, farmers' issues are bound to further dominate politics.
- Agriculture sector clocked a growth of just 3.8% (on a gross value added basis) in the second quarter compared to the 5.3% recorded in the preceding quarter.
- The farm sector output was growing strongly in the first three quarters of 2016-17, before imploding in the aftermath of the demonetisation exercise.
- This is not the first distress call from the farm sector to Parliament and policymakers; several such stirs have taken place across States over the past year alone.
- Around 30,000 farmers and tribals from Maharashtra walked for days to Mumbai, they drew appreciation for their restrained conduct compared to the usually unruly protesters.

Way-forward:

- The government has done an about-turn on its responses to a parliamentary panel that farmers were hit hard by the note ban, and sought to reassure farmers by reiterating its own initiatives for the sector.
- The Centre exhibits an aversion to inconvenient facts. And the Opposition's attempts to tap into their angst with breezy promises of loan waivers (with both the Congress and the Telangana Rashtra Samithi promising them in State election pitches) that over-simplify the crisis.

Indian Pavilion at COP24

Why in news?

- The Union Environment Minister Dr. Harsh Vardhan participated in the inauguration of Indian Pavilion at the 24th meeting of Conference of Parties (COP-24) to the United Nations Framework Convention on Climate Change (UNFCCC) held at Katowice, Poland.
- Theme of India Pavilion: “**One World One Sun One Grid**”.
- COP-24 is very significant as it is expected to finalise guidelines for implementation of the Paris Agreement adopted in 2016.

Minister's statement:

- The Ministry has launched a **nationwide campaign** in preserving and protecting the environment called the **Green Good Deeds Movement**.
- This campaign was prepared to inspire, encourage and involve each and every individual of the society to realize people's participation in accomplishing the goals.
- India's leadership in global climate action has been recognized and Prime Minister Narendra Modi has been bestowed with “**Champion of Earth Award**” this year by the United Nations in promoting International Solar Alliance and resolve to make India plastic free by 2022.
- India is working hard for achieving 175 GW target for installed Renewable Energy capacity by 2022. The effect of increased use of renewable energy is now visible in India. Resultantly, India stands 4th in wind power 5th in renewable power and 5th in solar power installed.
- Besides solar and wind power, we are also working on biomass, biofuel and bio-energy.
- Under **Ujjwala scheme** more than 310 million LEDs have been installed countrywide. Around 58 million households are already covered.
- **Ujjwala scheme will not only contribute to improved health of women and children, but also help on reducing forest degradation.**

India and Paris Agreement:

- **India strongly supports the objective of the Paris Agreement to strengthen the global response to the threat of climate change** by keeping the global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius.

- India considers it important from the point of view of eradicating poverty and caring for the poor and the marginalised. The **Agreement also focuses on developing country parties' need to adapt to adverse impacts of climate change, in a manner that it does not put an additional burden on them.**
- During the COP-24, **India would like to emphasise its concern for climate change and reaffirm its commitments to finalisation of the Paris Agreement Work Programme (PAWP).**
- India would like to ensure that **Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC)**, in the light of different national circumstances, are operationalised in all elements of the PAWP. The outcome of the PAWP should support the enhancement of ambition without backsliding.

Significant gaps in pre-2020 climate efforts:

- Significant gaps in pre-2020 climate efforts exist not only in mitigation but also in adaptation and support to developing countries.
- These implementation gaps will present an additional burden to developing countries in the post-2020 period.
- Therefore, the key concern for India is to ensure that no undue burden is shifted onto developing countries in the post-2020 period.
- The issue of pre-2020 commitments under Kyoto Protocol, particularly higher mitigation action of developed countries and the need for developed countries to fulfil their climate finance commitments of mobilising USD 100 billion per annum by 2020, will remain a priority for India in COP-24.
- Adaptation is very important for developing countries and requires an urgent global response in terms of adaptation needs for developing countries vis-à-vis finance, capacity building and technology.
- India is of the view that enhanced provision of new, adequate and predictable finance, technology development and transfer, as well as capacity-building support, is key enablers for developing countries to achieve higher ambition in their climate actions, in the context of sustainable development.

Discussions papers of climate finance:

- Department of Economic Affairs, Ministry of Finance, released a Discussion Paper entitled “3 Essential “S”s of Climate Finance - **Scope, Scale and Speed: A Reflection**” on the sidelines of COP 24 to UNFCCC at Katowice, Poland.
- The **Discussion Paper examines analytically the scope, scale and speed required in climate finance.**
- While the financial requirements of developing countries run into trillions of Dollars, the commitments made by the developed countries for enhancement and support in relation to climate finance is not clearly translated into reality. Equally important is the issue of reporting and tracking of climate finance.
- **Definitions of climate change finance used in various reports were not consistent with the UNFCCC provisions. Methodologies used were also questionable.**
- This Paper attempts to identify the essential elements, step by step, for a robust and transparent accounting of climate finance flows from developed to developing countries.

Sharing outbreak data

- Zika virus was first identified in Uganda in 1947.
- Large outbreaks were reported in French Polynesia and Brazil in 2013 and 2015 respectively.

Zika in India

- Zika cases were first reported in India in Gujarat in May 2017. In July 2017, the second outbreak was in Tamilnadu and Rajasthan witnessed the third outbreak in October 2018.

The issue

- The authorities have failed to publish health data regarding Zika outbreaks in Rajasthan and Madhya Pradesh which have seen 154 cases and 127 cases respectively.
- The day-wise numbers of confirmed infections were not reported.
- The genome sequences of infected patients have not been published.

Why such publications are needed?

- The daily count and genetic sequences are extremely helpful to epidemiologists studying zika.

- Daily count shows how quickly the virus is spreading
- Genetic sequencing helps us understand how the virus came to India and how long has it been in circulation.
- By comparing data from different patients, we can find out how the virus diverged from their recent common ancestor which will help us know when the virus entered India.
- Knowing the above data will help us respond accordingly to the outbreak by taking necessary steps.

Why data is not shared?

- Researchers do not share data as they feel others could use their data and publish analysis without giving them due credit.

WHO on sharing data

- WHO has stressed on the importance of genome data of pathogens during epidemics. The pathogen genome sequences should be made publicly available as rapidly as possible.
- The usefulness of sharing data is evident from the role it played in conducting epidemiological studies during Ebola outbreak in 2013 and zika outbreak in 2015.

RBI keeps interest rates unchanged

What is Repo rate?

- Repo rate is the rate of interest which is applied by RBI to commercial banks when the latter borrows from RBI.
- Repo rate is used to control inflation. In the event of raising inflation, RBI increase repo rate which will act as a disincentive for banks to borrow from the central bank. This ultimately reduces the money supply in the economy and thus helps in arresting inflation. Similarly, if it wants to make it cheaper for banks to borrow money it reduces the repo rate.

About MPC

- The Monetary Policy Committee (MPC) is a committee of the RBI, headed by its Governor, which is entrusted with the task of fixing the benchmark policy interest rate (repo rate) to contain inflation within the specified target level.
- The MPC have six members: RBI Governor (Chairperson), RBI Deputy Governor in charge of monetary policy, one official nominated by the RBI Board and remaining

almost 30% to below \$60 by end-November from \$85 in early October.

3 members would represent the Government.

- The MPC takes decisions based on majority vote. In case of a tie, the RBI governor will have the second or casting vote. The decision of the Committee would be binding on the RBI.

What is CRR?

- Cash Reserve Ratio (CRR) is the amount of funds that banks have to keep (only in the form of cash) with the RBI as a proportion of their deposits.

What is SLR?

- Statutory Liquidity Ratio (SLR) is the proportion of funds that banks have to maintain in the form of cash, gold reserves, government approved securities out of the total deposits that they hold.

Why in News?

- The RBI has conducted its fifth bi-monthly monetary policy review.

Minutes of the meeting

Repo rate

- MPC has left the repo rate unchanged at 6.5%.

Inflation projection

- The committee slashed its Consumer price index (CPI)-based inflation projection to 2.7-3.2% from 3.9-4.5% for the second half of the current financial year. It expects inflation to quicken to 3.8-4.2% in the first half of the following year.
- The reduction is mainly due to easing of food inflation, reducing crude prices and appreciating rupee.

GDP estimate

- The RBI decided to retain GDP growth rate estimate for 2018-19 at 7.4% and estimated growth at 7.5% for the first half of the next financial year.

'Calibrated tightening'

- The central bank decided to maintain the 'calibrated tightening' stance.
- According to RBI, a calibrated tightening means that in the current rate cycle, a cut in the repo rate is unlikely, and the RBI is not obliged to increase the rate at every policy meeting.

A Valid Pause:

- The MPC's decision not to increase repo rates was mainly due to unexpected softening in food inflation and a sudden reduction of oil prices in a surprisingly short span of time- which has been reduced

Why 'calibrated tightening'?

- The RBI has opted to stick to its policy stance of 'calibrated tightening'.
- Given that RBI's primary responsibility is to achieve and preserve price stability, the central bank is wary of the uncertainties around the inflation levels.
- With the prices of several food items at unusually low levels, the RBI reckons there is the clear and present danger of a sudden reversal, especially in prices of volatile perishable items.
- Also, the medium-term outlook for crude oil is still quite hazy, with the possibility of a flare-up in geopolitical tensions and any decision by OPEC both likely to impact supplies and will again increase oil prices.
- This stance would allow RBI to pause, reflect and undertake future policy action with more robust inflation signals.

RBI to cut SLR gradually to 18% by mid-2019

- In the 'Statement on Developmental and Regulatory Policies' post announcing its fifth bi-monthly monetary policy review, the RBI said it will reduce the SLR for banks to 18% of net demand and time liabilities (NDTL) from the current 19.5% over the next six quarters, by 25 bps each in every quarter.
- The first reduction of 25 basis points will take effect in the quarter starting in January 2019.
- A reduction in SLR would mean higher liquidity for the banks, so they would have more funds to lend. This reduction is likely to free up Rs. 1-1.5 trillion of funds in the next one and half year into the banking system.

'Cash Reserve Ratio not in MPC ambit'

- Despite calls for the cash reserve ratio (CRR) cut to ease liquidity, RBI chose to retain it at 4 per cent.
- RBI Governor Urjit Patel said that CRR is not in the MPC ambit.
- Instead, RBI assured that it will continue with increased government bond purchases through open market operations (OMO) to provide liquidity till March-end.

Tariff truce

What is a 'tariff war'?

- The scenario when a country raises the tax rate on products coming from another

has significantly affected the global economic growth.

country and that country, in retaliation raises the tax rate on products exported from the first country, is called a tariff war.

- It is the economic battle between the two countries and it ultimately results in raising the total cost of those products

Escalated tariff war

- The trade rivalry between the U.S. and China escalated to an unprecedented level with both countries announcing new tariffs on imports from each other.
- The US says China's "unfair" trade practices like devaluing currency to push its exports have helped create a lofty trade deficit and accuses China of intellectual property theft. It has imposed \$250bn of tariffs on Chinese goods since July.
- China accuses the US of launching the "largest trade war in economic history". It has retaliated with duties on some \$110bn worth of goods.

Temporary Truce

- On the side-lines of the G20 meeting in Buenos Aires, the U.S. and Chinese Presidents, Donald Trump and Xi Jinping, agreed to a 90-day truce.
- The two countries agreed to find an amicable solution to the various problems plaguing bilateral trade relations, such as disputes over intellectual property rights and Chinese state support for domestic industries, through talks over the next three months.
- Meanwhile, the U.S. will refrain from raising the tariff on Chinese goods worth \$200 billion from the current rate of 10% to 25% on January 1, 2019, as planned. In return, China will purchase agricultural and other goods from the U.S. in order to reduce the trade imbalance between the two countries.

Cooling down of Trade war?

- In October, Canada and Mexico arrived at a compromise trade agreement with the U.S., replacing the decades-old North-American Free Trade Agreement (NAFTA). So these may be considered as signs that the global trade war that began earlier this year may be started to cooling down.
- Though it is still unclear that any compromise between the two trade giants will include a complete rollback of the tariffs imposed on each other, the temporary trade truce should still offer some relief, as the U.S.-China trade battle

Way Forward

- The tariff war had caused significant slowdown in the Chinese economy and also affected American financial markets.
- Both the countries should recognise the fact that there are no economic winners in any trade war and resolve their disputes amicably.

Flying into losses

Why there is a crisis in the aviation industry?

- The three main publicly listed airlines in the country — IndiGo, SpiceJet and Jet Airways — slipped from profitability to steep losses in the first nine months of the current calendar year. These airlines together account for 70% of the domestic market share.

Why are they in trouble?

- With **crude oil prices** having risen over the past year and a half, the cost of Aviation Turbine Fuel saw a 40% rise. Fuel accounts for the biggest expenditure for an airline—between 30 and 40% of the total expenditure incurred.
- At the same time, the rupee has seen a consistent fall (**depreciation**) and even breached 74 to a dollar in early October, though it has stabilised to a degree now. This meant that fuel costs apart, airlines were spending more on payments made in foreign currency for engine lease rentals, and maintenance and purchase of spare parts.
- Despite this rise in operational costs, the airlines have been unable to raise fares because of stiff **competition** among them.
- As a result, by the end of September, market-leader IndiGo posted a loss of Rs 6,52.1 crore — its first loss since being publicly listed.

What does it mean for passengers?

- An airline shutting down could impact connectivity and compress capacity on important routes and drive up airfares.
- Air travel is no more a luxury, but a necessity, and impacts the economy. So, possible airline failures will impact the public directly and indirectly.
- However, experts say that an airline closing down is unlikely, though there could be a merger or a consolidation.

What lies ahead?

- According to the International Air Transport Association, the global aviation body, India will be the third biggest aviation market by 2024 after China and the U.S. Short-term cyclical issues are unlikely to impact the long-term strategic outlook.
- India is the aviation market of the 21st century and experts see a profitable future for most Indian carriers, if infrastructure, policy and regulatory framework improve.

Slowdown signals

Q2 Growth estimates

- In November, CSO released growth estimates for the July-September quarter (Q2) of the current financial year.
- Gross Domestic Product (GDP) growth slowed to 7.1%, the slowest it has been this financial year, from a two-year high of 8.2% in the previous quarter.
- Quarterly GVA (basic price) at constant (2011-2012) prices for Q2 showed a growth rate of 6.9 per cent over the corresponding quarter of previous year.

Reasons for the slowdown

- According to economists, much of the slowdown in economic growth can be attributed to
 - Base effect**- Some experts believe that growth actually has not slowed down in a strong way because the 8.2% in Q1 was due in large part to a base effect.
 - Reduction in demand due to rising **oil prices** combined with a **weakening rupee**
 - Impact of election season and the corresponding uncertainty on investment sentiment

Status of primary sector

- Worryingly, GVA growth in agriculture, forestry and fishing reduced to 3.8%, from

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5.3% three months earlier, as food grain output in the Kharif season inched up a mere 0.6% (production had expanded by 1.7% in the previous year).

- Given the distress in the farm sector, below-normal monsoon rains and a shortfall of over 8% in Rabi sowing till November 30, the outlook for rural demand remains challenging at least for the next couple of quarters.

Expansion of GFCF

- Gross fixed capital formation (GFCF), a key metric for investment demand, expanded by a robust 12.5%, from 10% during the first quarter, and constituted 32.3% of GDP.
- With non-food bank credit also showing signs of a recovery, there are prospects of an investment revival.

Fiscal deficit targets

- The latest expenditure and receipts figures released by the Controller-General of Accounts showed that the fiscal deficit crossed the budget estimate for the full year in just the first seven months, raising the chances that the Centre would miss its target of limiting the deficit to 3.3% of GDP.

Conclusion

- Though the rate of economic growth in the second quarter of 2018-19 looks respectable, a weakening trend could be a worrying sign, as the country needs a growth rate of over 8 per cent to generate enough jobs for the more than 12 million young Indians entering the labour force each year.
- With multiple uncertainties looming on the global trade and growth horizon and elections approaching, India's economic managers will need to be at their best to keep the momentum from sliding.