

# 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.



# News @ a glance

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<b>Polity and social issues</b>	<b>3</b>	<b>Science &amp; Technology</b>	<b>18</b>
Voter Awareness Forums	3	AI to detect Alzheimer's	18
Quota for EWS	3	Monkey fever	18
Deendayal Disabled Rehabilitation Scheme	4	DAMINI	19
Shehri Samridhi Utsav	4	Science communication initiatives	19
Devadasi system	5	UNNATI	20
Global Housing Technology Challenge	6	India's First Lithium Ion Giga Factory	20
Tobacco & School Children	6	Rapid diagnostic kit for chikungunya	21
<b>Economy</b>	<b>8</b>	Dark side of the Moon	21
Pradhan Mantri Khetriya Khanij Kalyan Yojna	8	Cutting red meat and sugar	22
Vibrant Gujarat	8	Delay in human spaceflight plan	22
NPAs from MUDRA loans	8	<b>Environment</b>	<b>24</b>
Technology centres for MSMEs	9	Turtle festival	24
Processing I-T returns in a day	9	Crocodile census	24
Womaniya on GeM	9	Sita Rama Lift Irrigation Project	25
Recapitalisation of Exim Bank	10	Asian waterbird census	25
PMRPY Achieves one crore Milestone	10	Trishna Gas project	27
UDAN-III soon	10	Common Pochard	27
External commercial borrowing	11	Ganga pollution	27
Banks under PCA	11	Northeast is home to six new lizards	28
Retail inflation	12	<b>Culture</b>	<b>29</b>
Air Cargo Policy	12	Sagar Island for Makar Sankranti	29
<b>International Relations</b>	<b>13</b>	Bhogali Bihu	29
AIIB's 3 <sup>rd</sup> anniversary	13	Kumbha Mela	29
JICA	13	Hunar Haat	30
India-Central Asia Ties	13	Spiritual Circuit	31
Mini 2+2 dialogue	14	'SANJHI -MUJH MEIN KALAKAR'	31
India-US ties	14	National Museum of Indian Cinema	32
H1 -B	15	<b>Miscellaneous</b>	<b>34</b>
India-UAE Agro ties	15	Philip Kotler Presidential Award	34
Recognition of UK degrees in India	15	Gandhi Peace prize	34
India-Iran Pharma ties	16	Global aviation summit 2019	34
India's Human Rights Record	16		

# News in-depth

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<b>General Studies-2</b>	<b>36</b>	Where the rich got their way	48
Afghanistan -A New Talking Point	36	The coast is unclear	49
Decoding the Rafale controversy	37	Train hits killed 49 elephants in 3 years	50
Assam Accord	39	Half done	52
Collegium controversy	40	Desalination plants harm environment: UN	53
The problem of hasty passage of Bills in Parliament	41	Learning to compete	54
SC records how the bar girls took on the Maharashtra govt	42	<b>YOJANA JANUARY 2019 (Part I)</b>	<b>56</b>
Learning little	43	Scientific innovations in the service of society	56
Basic income works and works well	44	Capitalizing on technology for farmer's welfare	58
Sedition, once more	45	Space programmes: Spin offs for humanity	59
<b>General Studies 3</b>	<b>48</b>	Inspiring innovators of tomorrow	60
		Nano Mission	61

# News @ a glance

## Polity and social issues

### Voter Awareness Forums

#### What is Voter Awareness Forum:

- **Voter Awareness Forum(VAF)** was launched by Election Commission of India in New Delhi.
- Voter Awareness Forums are informal Forums for generating awareness around electoral process through activities like discussions, quizzes, competitions and other engaging activities.
- All employees of the Organisation are expected to become members of the VAF with the Head of the Organisation acting as the Chair.
- The aim of Voter Awareness Forum is to promote **informed and ethical electoral participation, beginning from the first step ie voter registration to casting of vote.**

#### Why it is in news:

- **The Election Commission of India** wants to increase informed and ethical electoral participation in election, so it created **Voter Awareness Forum to increase awareness and knowledge of election process among voters.**

### Quota for EWS

#### 10% Quota for Economically Weaker Sections of Society:

- The Constitution (One Hundred and Twenty-Fourth Amendment) Bill, 2019 was introduced in Lok Sabha. The Bill seeks to provide for the advancement of “economically weaker sections” of citizens by providing 10% reservation for them in educational institutions and jobs.
- Article 15 of the Constitution prohibits discrimination against any citizen on the grounds of race, religion, caste, sex, or place of birth. However, the government may make special provisions for the advancement of socially and educationally backward classes, or for Scheduled Castes and Scheduled Tribes. The Bill seeks to

amend Article 15 to additionally permit the government to provide for the advancement of “economically weaker sections”. Further, up to 10% of seats may be reserved for such sections for admission in educational institutions. Such reservation will not apply to minority educational institutions.

- Article 16 of the Constitution prohibits discrimination in employment in any government office. However, the government can allow reservation for any “backward class of citizens”, if they are not adequately represented in the services under the state. The Bill seeks to amend Article 16 to permit the government to reserve up to 10% of all posts for the “economically weaker sections” of citizens.
- The reservation of up to 10% for “economically weaker sections” in educational institutions and public employment will be in addition to the existing reservation.
- The central government will notify the “economically weaker sections” of citizens on the basis of family income and other indicators of economic disadvantage.

#### Why in news?

- The Bill has been successfully passed in the Parliament and gets President's assent.

#### 10% EWS quota to be implemented in colleges and universities

- Union HRD Minister, Shri Prakash Javadekar while addressing a press conference in New Delhi today, informed that in a landmark decision, the Government has decided that from the academic year 2019-20 itself, **10 percent Economically Weaker Section (EWS) quota will be implemented across 40,000 colleges and 900 Universities in the country.**
- **This 10 percent quota for EWS will be over and above the existing quotas for SCs, STs and OBCs and General seats.**

- Adequate additional seats will be created in these colleges and universities to implement the quota for EWS. The minister said, The UGC and AICTE will be provided the operational mandate within a week to implement the quota.

### Gujarat to implement the quota

- In a press release, the State government of Gujarat said the new quota would be implemented in admissions to educational institutions and jobs which were advertised before January 14 but for which the actual process for recruitment or admissions had not started before January 14.
- **This makes Gujarat the first State to implement the quota.**
- In such cases, a fresh announcement about the admission process or jobs would have to be made, the release added.

### Why it is in news:

- **The Parliament recently passed Constitution (124<sup>th</sup> amendment) bill, 2019 and The President of India gave assent to the Bill. Now states have started to implement the Constitutional provisions given in the Bill.**
- **Gujarat becomes the 1<sup>st</sup> state** to implement 10% quota for general category poor in government jobs and institutes.
- **Jharkhand becomes the 2<sup>nd</sup> state and Uttar Pradesh becomes the 3<sup>rd</sup> State** to implement the 10% quota for general category poor in government jobs and institutes.

## Deendayal Disabled Rehabilitation Scheme

### About Deendayal Disabled Rehabilitation Scheme:

- Ministry of Social Justice & Empowerment, Department of Empowerment of Persons with Disabilities implements a scheme titled 'Deendayal Disabled Rehabilitation Scheme (DDRS)
- DDRS is a Central Sector Scheme of Government of India which is being implemented since 1999 for providing financial assistance to NGOs working for education and rehabilitation of persons with disabilities.
- This scheme was revised in 2018 and the revised scheme is being implemented since 1st April 2018.

- **Important provisions** of new scheme such as **increase in the cost norms by 2.5 times, streamlining the procedure of application, increase the funding of projects from 75% to 90% of their total cost, extending special benefits to special areas such as Left Wing Affected Districts, removal of limit in increase of number of beneficiaries, etc**

### The objectives of the scheme are:

- To create an enabling environment to ensure equal opportunities, equity, social justice and empowerment of persons with disabilities.
- To encourage voluntary action for ensuring effective implementation of the People with Disabilities (Equal Opportunities and Protection of Rights) Act.

### Why it is in News?

- A Regional Conference for the scheme was organized on 17th January, 2019 at Nehru Centre, Mumbai covering Programme Implementing Agencies (PIAs) from the Western Region of the country.
- This is the **second of a series of Regional Conferences to be held across the country** and the exercise will culminate in a **National Conference in New Delhi.**
- This Regional Conference was organized in order to disseminate the provisions of the revised scheme and bring the Department closer to implementing agencies.
- This conference provided a wonderful opportunity for interactions with all stakeholders from Central Government to implementing agencies for better implementation of the Scheme on the ground in such a way that is helpful for **Persons with Disability.**

## Shehri Samridhi Utsav

### What is Shehri Samridhi Utsav:

- Shehri Samridhi Utsav is fortnight of events focusing on urban livelihoods is being organised by Ministry of Housing and Poverty Alleviation, from 1<sup>st</sup> -15<sup>th</sup> February 2019.
- The event aims at extending the outreach of **National Urban Livelihoods Mission (DAY-NULM)** to the poorest of the poor and the most vulnerable, showcase its initiatives and facilitate access of SHG members to the other government schemes.

### About Deen Dhayal Antyodya Yojana- National Urban Livelihood Mission:

- The mission aims to **reduce poverty and vulnerability of the urban poor households** by enabling them to access **gainful self-employment and skilled wage employment opportunities**, resulting in an **appreciable improvement** in their livelihoods on a sustainable basis, through **building strong grassroots level institutions of the poor**.
- The mission would aim at **providing shelter equipped with essential services to the urban homeless** in a phased manner.
- In addition, the Mission would also **address livelihood concerns of the urban street vendors by facilitating access to suitable spaces, institutional credit, social security and skills to the urban street vendors** for accessing emerging market opportunities.
- The Mission has made significant progress on all these fronts –
  - a. Over 34 lakh urban poor women have been organized into Self Help Groups and their federations.
  - b. Over 8.9 lakh candidates have been skill trained and certified with over 4.6 lakh provided placement,
  - c. Over 8.5 lakh individuals and groups have been supported to access subsidized loans.
  - d. 1,098 shelters have been made functional creating capacity for more than 60,000 urban homeless.
  - e. 16 lakh street vendors have been identified through survey in 2,430 cities and half of them have been given identity cards.

### Why it is in News:

- Ministry of Housing & Poverty Alleviation is organizing “Shehri Samridhi Utsav” focusing on Urban Livelihoods from 1st - 15th February 2019, which aims at extending outreach of DAY-NULM to poorest of the poor & most vulnerable - to showcase its initiatives & facilitate access of SHG Members

## Devadasi system

### About Devadasi System:

- Devadasi system is a religious practice in parts of southern India, including Andhra Pradesh, whereby parents marry a daughter to a deity or a temple.

- The marriage usually occurs before the girl reaches puberty and requires the girl to become a prostitute for upper-caste community members.
- Such girls are known as jogini and they are forbidden to enter into a real marriage.

### Why it is in News?

- In Karnataka, despite having Karnataka Devadasis (Prohibition of Dedication) Act of 1982 for more than 36 years, the practice of dedicating young girls to temples as an offering to appease the gods persists.

### Why Devadasi System is prevalent in Karnataka?

- Despite having Karnataka Devadasis (Prohibition of Dedication) Act of 1982 for more than 36 years **State government is yet to issue the rules for administering the law**
- Two new studies on the *devadasi* practice by the National Law School of India University (NLSIU), Bengaluru, and the Tata Institute of Social Sciences (TISS) in Mumbai, paint a grim picture of the **apathetic approach of the legislature and enforcement agencies to crack down on the practice, particularly prevalent among oppressed communities of north Karnataka**.
- The studies revealed that **special children, with physical or mental disabilities, are more vulnerable to be dedicated as devadasis** — nearly one in five (or 19%) of the *devadasis* that were part of the NLSIU study exhibited such disabilities.
- The NLS researchers found that **girls from socio-economically marginalised communities continued to be victims of the custom, and thereafter were forced into the commercial sex racket**. The TISS study buttresses the point by stressing that the *devadasi* system continues to receive customary sanction from families and communities.
- **Reporting of cases pertaining to the custom under the Karnataka law is very low**, with only four cases filed between 2011 and 2017. None of these cases were filed in Ballari, where village and district authorities indicated that identifying and preventing the incidents was difficult.
- **The law is used sparingly, and focuses on prosecution (including of the victims**

themselves) with no framework for rehabilitation

- The NLSIU's Centre for Child and the Law noted in its report that despite sufficient evidence of the prevalence of the practice and its link to sexual exploitation, recent legislations such as the Protection of Children from Sexual Offences (POCSO) Act 2012, and Juvenile Justice (JJ) Act of 2015 have not made any reference to it as a form of sexual exploitation of children.
- Dedicated children are also not explicitly recognised as children in need of care and protection under JJ Act, despite the involvement of family and relatives in their sexual exploitation.
- India's extant immoral trafficking prevention law or the proposed Trafficking of Persons (Prevention, Protection and Rehabilitation) Bill 2018, also **do not recognise these dedicated girls as victims of trafficking for sexual purposes.**
- The Studies underline the State's failure to enhance livelihood sources for weaker sections of society which leads to the continuation of the practice.
- The Studies suggest **a legislative overhaul, more inclusive socio-economic development** and a more **pro-active role from State agencies**

## Global Housing Technology Challenge

- The Centre launched Global Housing Technology Challenge which aims to provide about ₹150 crore as a technology innovation grant to build 6,000 homes – cheaper, faster and better -- using alternative technologies and materials
- Another section of the Challenge will identify potential future technologies which may not yet be market ready, and offer incubation facilities and accelerator support in collaboration with four of the IITs.

### Why it is in News?

- As CEO of NITI Aayog points out “We cannot meet urbanising India's housing needs with existing technologies,” pointing out that most Indian developers take three years to complete a project.

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- “Houses must be completed in four to five months’ time. What we need is not technology leapfrogging, but pole-vaulting.” Said by CEO of NITI Aayog.
- So, the Central Government launched a Global Housing Technology Challenge to find out whether houses can be built in a cheaper as well as faster manner, as housing shortage is a bigger problem in urban India.



## Tobacco & School Children

- Two groups working in the area of tobacco control -- Consumer Voice and Voluntary Health Association of India -- undertook a study in 20 cities across six states in India.
- The study was conducted to determine the extent of tobacco products being marketed and sold around schools in India and released a report Titled Tiny Targets.

### Findings of the report:

- Despite the prohibition on sales of tobacco products near educational institutions, numerous shops/vendors/points of sale sell and advertise tobacco products around schools.
- Vendors display tobacco products in ways that are appealing to children and youth. Investigators documented that in 225 tobacco points of sale observed, 91% of displays were at 1 metre – child's eye level, 54% had no visible health warning; and 90 per cent of displays were, beside candies, sweets and toys, items marketed to children.
- These tactics, happening all over the country, is a clear violation of Section 5 and 6 of Cigarettes & Other Tobacco Products Act, it said.
- Ninety-one percent of all displays around these schools were at a height of one metre, making it a “child's eye level.” Ninety

percent of the displays were around candy, sweets and other items popular with children and 54% of these points of sale did not have any visible health warnings.

- Additionally, 90.9% of stores surveyed were selling single sticks of cigarettes and bidis, easy for children to afford.
- Most of the popular points of sale were small street vendors.

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- According to the Union health ministry, 37% of children in India start smoking before the age of ten.
- All of this is of concern to the public health community in India.

#### **Why it is in News?**

- A study by two groups workings in area of tobacco control published findings of their study which was alarming to find how children were being targeted by Tobacco companies.

## Economy

### Pradhan Mantri Khetriya Khanij Kalyan Yojna

#### About PMKKKY

- The programme is meant to provide for the welfare of areas and people affected by mining related operations.
- It is being implemented by the District Mineral Foundations (DMFs) of the respective districts using the funds accruing to the DMF.
- The Mines and Minerals (Development & Regulation) Amendment Act, 2015, mandated the setting up of DMFs in all districts in the country affected by mining related operations. The Central Government has notified the rates of contribution payable by miners to the DMFs.

#### Objectives of PMKKKY

- To implement various developmental and welfare programs in mining affected areas.
- To minimize/mitigate the adverse impacts, during and after mining, on the environment, health and socio-economics of people in mining districts.
- To ensure long-term sustainable livelihoods for the affected people in mining areas.

#### Why in News?

- Ministry of Mines has organized the 1st National level workshop on District Mineral Foundation (DMF)/ Pradhan Mantri Khetriya Khanij Kalyan Yojna in New Delhi.
- The main objective of the workshop was to discuss various issues to expedite implementation of DMF and developing strategies to address the challenges in DMF implementation, audit and reconciliation, improving PMKKKY guidelines, criteria for identification of affected people and areas, etc.
- With the accrual of Rs 23,606 crores, DMF has ushered a positive perception about mining industry. Estimated accrual of more than 2.5 lakh crore in next 25 years in DMF and its optimum utilisation in implementation of PMKKKY has the potential of changing the landscape of area affected by mining and also change in the life of people affected by mining.

### Vibrant Gujarat

#### What's in the news?

- Prime Minister Narendra Modi will inaugurate the 9th edition of the Vibrant Gujarat Global Investors Summit on January 18, in the presence of five heads of states and also over one hundred diplomats and captains of the country's industries.
- After inaugurating the main session, the Prime Minister will also participate in a round table conference with financial experts and sovereign funds CEOs regarding opportunities for investments in the country.
- A day before the main event on January 18th, PM will open *Vibrant Gujarat Global Trade Show* in which several hundred companies from across the country are participating.
- Uzbekistan president Shavkat Mirziyoyev, Rwandan president Paul Kagame, Denmark's Prime Minister, Lars Lokke Rasmussen, Prime Minister of Czech Republic, Andrej Babis and Prime Minister of Malta, Joseph Muscat have confirmed their presence in the global summit in which around a dozen countries have joined as country partners.
- As part of the Vibrant Gujarat Investment Summit, the Gujarat Government in consultation with the Ministry of External Affairs is holding "Africa Day" with presence of over one hundred diplomats and public figures from African nations.
- This is a second such outreach engagement by the Gujarat government with African countries after it held annual general meeting and conference of African Development Bank in May 2017.

### NPAs from MUDRA loans

#### About PMMY

- Pradhan Mantri Mudra Yojana (PMMY) is a flagship scheme of Government of India to "fund the unfunded" by bringing micro and small entrepreneurs enterprises to the formal financial system and extending affordable credit to them.
- It enables micro and small entrepreneurs to borrow from all Public Sector Banks such as PSU Banks, Regional Rural Banks and Cooperative Banks, Private Sector Banks,

Foreign Banks, Micro Finance Institutions (MFI) and Non Banking Finance Companies (NBFC) for loans upto Rs 10 lakhs for **non-farm** income generating activities. The scheme was launched in 2015.

- Loans can be granted under three categories
  - up to Rs 50,000 under 'Shishu'
  - Rs 50,001-Rs 5 lakh under 'Kishore'
  - Rs 5,00,001-Rs 10 lakh under 'Tarun' category.

#### Why in News?

- The RBI has raised a red flag over spike in NPAs under the Pradhan Mantri Mudra Yojana.
- The central bank has cautioned that the scheme might turn out to be the next big source of NPAs that have plagued the banking system. RBI said that bad loans under PMMY had risen to Rs 11,000 crore.
- As per the annual report of PMMY, 2017-18, total disbursements under the scheme stood at Rs 2.46 trillion in FY 18.
- Out of this, 40 per cent were disbursed to women entrepreneurs and 33 per cent to social categories. More than 4.81 crore micro borrowers have benefited through PMMY during the year FY 2017-18.

## Technology centres for MSMEs

#### What's in the news?

- According to Sudhir Garg, Joint Secretary of the Union Ministry of Micro, Small and Medium Enterprises (MSME), the ministry will develop 20 technology centres, along with extension centres across the country in another 3-5 years. These centres would come up at an investment of Rs 200 crore each.
- As many as 18 tool rooms are operational in the country and 15 more are in different stages of development or have started functioning. They have modern technology machinery and testing equipment and the services are offered to industries at a competitive price.
- With the development of technologies such as virtual reality and augmented reality, the manufacturing units in the MSME sector need to have access to these.
- The Ministry is creating trained manpower in virtual reality through the National Small Industries Corporation (NSIC). It has also developed training modules that use virtual reality and these will be launched

Officers IAS Academy, Chennai across the country through the NSIC in a couple of months.

- The Ministry has established about 100 livelihood business incubators at taluk levels to train man power and create new businesses and plans to have more such incubators.

## Processing I-T returns in a day

#### What's in the news?

- The Union Cabinet has approved an integrated income-tax e-filing and centralised processing centre (CPC) portal, which will reduce the return processing time from 63 days to just one day. The new portal is also expected to process the refunds within one day of filing of tax returns, in huge relief for taxpayers.
- The Integrated E-filing & CPC 2.0 is expected to take 18 months to develop and three months to be tested before it is implemented, and an amount of Rs 4,241.97 crore has been set aside for it. The portal will be operational for eight years, and the project has been awarded to Infosys, which emerged as the lowest bidder.
- The broad objectives of the project are to provide faster and more accurate outcomes for the taxpayer, enhance the user experience at all stages, improve taxpayer awareness and education through continuous engagement, and promote voluntary tax compliance.

## Womaniya on GeM

#### About GeM

- The Government e-Marketplace (GeM) is a 100 percent government owned company setup under the aegis of Ministry of Commerce and Industry for procurement of common use goods and services by Government ministries, departments and CPSEs.
- In 2017, the government made it **mandatory** for all the departments and ministries to source goods and services from the GeM.

#### Objectives of the GeM

- To bring more transparency and to streamline the government procurement process.

- Achieve cashless, contactless and paperless transaction, in line with Digital India objectives.
- Increase overall efficiency leading to significant cost saving on government expenditure in procurement.

#### Why in News?

- GeM has launched “Womaniya on GeM”, an initiative to enable women entrepreneurs and women self-help groups to sell handicrafts and handloom, accessories, jute and coir products, home décor and office furnishings, directly to various Government ministries, departments and institutions.
- The initiative seeks to develop women entrepreneurship on the margins of society to achieve gender-inclusive economic growth.
- Womaniya on GeM will spur hyper-local economic opportunities for women entrepreneurs and address goals and objectives under United Nations Sustainable Development Goal 5: Achieve gender equality and empower all women and girls.

### Recapitalisation of Exim Bank

#### About EXIM Bank

- Export-Import Bank of India (EXIM Bank) was established in 1982 under an Act of Parliament as the apex financial institution for financing, facilitating and promoting India's international trade.
- The Bank primarily lends for exports from India including supporting overseas buyers and Indian suppliers for export of developmental and infrastructure projects, equipment, goods and services from India. It is regulated by RBI.

#### Why in News?

- The Union Cabinet has approved issuance of **recapitalisation bonds** to the tune of Rs 6,000 crore for capital infusion in Exim Bank.
- The Cabinet also approved an increase in the authorized capital of Exim Bank from Rs. 10,000 crore to Rs. 20,000 crore.

#### Significance

- Exim Bank is the principal export credit agency for India. The infusion of capital into Exim Bank will enable it to augment capital adequacy and support Indian exports with enhanced ability.

#### What are recapitalisation bonds?

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- A government bond is an instrument to raise money from the market with a promise to pay to repay the face value of the maturity date and a periodic interest.
- A bond issued for the purpose of recapitalisation (*injection of capital by the government to financially strengthen banks*) is called recapitalisation bonds.

### PMRPY Achieves one crore Milestone

#### About PMRPY

- Pradhan Mantri Rozgar Protsahan Yojana (PMRPY) is the flagship scheme of the Central Government for employment generation.
- It was announced in 2016 and is being implemented by Ministry of Labour and Employment through the Employees' Provident Fund Organization (EPFO).
- Under the scheme, Government is paying full employers' contribution of **12%** (towards Employees' Provident Fund and Employees' Pension Scheme both), for a period of 3 years in respect of new employees, with salary up to Rs. 15,000 per month.
- The entire system is online and AADHAR based with no human interface in the implementation of the scheme.

#### Significance of the scheme

- PMRPY has a dual benefit i.e. on the one hand, the employer is incentivised for increasing the employee base in the establishment through payment of EPF contribution of 12% of wage, which otherwise would have been borne by the employer and on the other hand, a large number of workers find jobs in such establishments.
- A direct benefit is that these workers have access to social security benefit through Provident Fund, Pension and Death Linked Insurance.

#### Why in News?

- PMRPY has crossed the milestone of one crore beneficiaries as on January 14, 2019.
- The number of establishments who have benefited during the implementation of the scheme is 1.24 lakh.

### UDAN-III soon

#### UDAN scheme

- In 2017, the Ministry of Civil Aviation launched the Regional Connectivity

Scheme “ UDAN” (Ude Desh Ka Aam Naagrik) which aims at providing connectivity to un-served and under-served airports of the country through revival of existing air-strips and airports to make flying affordable to the common man.

- UDAN has a unique market-based model. Airline routes are allocated to operators selected through a competitive bidding mechanism.
- Airlines have to set aside 50% of the total aircraft capacity for cheaper fares to be offered at the rate of Rs 2,500 per hour of flight, in return for which airlines are given a subsidy by the Centre and the State government concerned.

#### Why in News?

- Union Minister for Civil Aviation Suresh Prabhu said that the ministry will shortly award new regional connectivity routes under UDAN III.
- The third round of bidding under UDAN concluded recently and 15 airlines had bid for a total 111 routes.

### External commercial borrowing

#### What is External Commercial Borrowing?

- ECB is basically a loan availed by an Indian entity from a non-resident lender. Most of these loans are provided by foreign commercial banks and other institutions.
- Large number of Indian corporate and PSUs have used the ECBs as sources of investment.

#### Why in News?

- To further improve the ease of doing business in India, the RBI has drawn up a new ECB framework allowing all eligible borrowers to raise up to \$750 million per financial year under the automatic route, replacing the existing sector-wise limits.
- The list of eligible borrowers has been expanded to include all entities eligible to receive foreign direct investment (FDI).
- Additionally, port trusts, units in SEZ, SIDBI, EXIM Bank, registered entities engaged in microfinance activities, registered societies/trusts/ cooperatives and non-government organisations can also borrow under the new framework.
- Any entity who is a resident of a country which is financial action task force compliant, will be treated as a recognised lender. This change increases lending options and allows various new lenders in

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ECB space while strengthening the anti money laundering framework.

- The RBI has decided to keep the minimum average maturity period at 3 years for all ECBs, irrespective of the amount of borrowing instead of multiple layers in the existing framework.

### Banks under PCA

#### What is Prompt Corrective Action (PCA)?

- The PCA framework specifies the trigger points or the level in which the RBI will intervene with corrective action if a commercial bank's financial condition worsens below a mark. It is to ensure that banks don't go bust.
- The parameters that invite corrective action from the central bank are:
  - Capital to Risk weighted Asset Ratio (CRAR)
  - Net Non-Performing Assets (NPA)
  - Return on Assets (RoA)
- Currently, RBI has placed 11 state-run banks under prompt corrective action.

#### What will happen when a bank brought under PCA?

- When these parameters reach the set trigger points for a bank, the RBI will initiate certain structured and discretionary actions for the bank including
  - Restriction on dividend distribution/remittance of profits;
  - Requirement on promoters/owners/parents to bring in more capital;
  - Restrictions on branch expansion;
  - Higher provisioning requirement; and,
  - Restrictions on management compensation.

#### Board for Financial Supervision

- The Board for Financial Supervision (BFS) of RBI is chaired by the RBI Governor and includes the four deputy governors and a few other board members.
- BFS has been entrusted by the central bank board to review the performance of the banks under PCA.

#### Why in News?

- The BFS has asked the banks under the PCA framework to provide an estimate of the quantum of provision for bad loans required for the January-March quarter and the shortfall in capital due to the

**provisioning**, to the RBI before a decision can be taken to remove restrictions on some banks.

*(Provisioning refers to the percentage of the loan amount that the bank has set aside as provisions to meet an eventuality where the loan might have to be written off if it becomes irrecoverable)*

- If there is a shortfall in capital, the government can step in to meet the capital requirement which could help some of the banks out of the PCA framework.

## Retail inflation

### About CPI

- It is an index which measures the weighted average of prices of a basket of consumer goods and services such as transportation, food and medical care.
- It is calculated by measuring price changes for each item in the predetermined basket of goods & services and averaging them.
- It is released by the Central Statistical Organisation (CSO) under the Ministry of Statistics and Program Implementation.
- The base year being used to calculate CPI in India is 2011-2012.

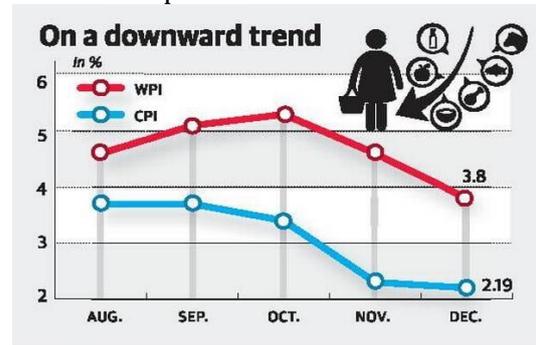
### About WPI

- It measures and tracks the changes in the price of goods in the stages before the retail level. It provides estimates of inflation at the wholesale transaction level for the economy as a whole.
- It is released by the Office of Economic Adviser, Department of Industrial Policy and Promotion, Ministry of Commerce and Industry. The base year is 2011-2012.
- The index basket consist of commodities under 3 main categories in decreasing order of weightage: Manufactured products, Primary Articles and Fuel and Power.

### Why in News?

- Inflation in December eased at both the retail and wholesale levels with the CPI coming in at an 18-month low and the WPI registering an eight-month low.
- Growth in the CPI stood at 2.19% in December, down from the 2.33% registered in November.

- Inflation as measured by the WPI dropped to an eight-month low of 3.8% in December from the 4.64% recorded in November.
- The fall is mainly due to falling food and fuel prices.



## Air Cargo Policy

### What's in the News?

- The government has unveiled its much-awaited national air cargo policy during the two-day Global Aviation Summit 2019.

### Highlights of the policy

- It seeks to make India among the top five air freight markets by 2025, besides creating air transport shipment hubs at all major airports over the next six years.
- The cargo policy encourage code sharing/interline agreements between foreign and Indian carriers.
- It also aims to promote the development of a last mile/first mile connectivity program at international/regional gateways.
- To increase process transparency while decreasing shipment delays, costs and dwell time, a fully automated paperless trade environment with minimum face-to-face interactions will be implemented.
- The policy covers all three categories of air cargo transport - domestic cargo to ensure efficient flow of goods across India; international cargo facilitating all indigenous export and import of goods; and transit international cargo by making India the transit cargo hub of choice to and from other parts of the globe.
- The GST and other economic legislation to be reviewed by the appropriate government agencies to ensure effective measures are in place to support the national air cargo development strategies, among others, the policy document said.

# International Relations

## AIIB's 3<sup>rd</sup> anniversary

### Introduction:

- On January 16, the Asian Infrastructure Investment Bank (AIIB) marked its third anniversary.
- India has been the bank's biggest beneficiary, with a quarter of the AIIB's approved projects geared towards its development.
- India is also the only country apart from China to enjoy a permanent seat on the Bank's board of directors.

### About AIIB:

- The AIIB is a **multilateral development bank** that aims to support the building of infrastructure in the Asia-Pacific region.
- It was proposed as an **initiative by the government of China** in 2013 and came into existence in 2014.
- The capital of the bank is \$100 billion, equivalent to 2/3 of the capital of the Asian Development Bank and about half that of the World Bank.
- Recently AIIB extended USD 1.2 bn loan for infra projects in India.
- The fund will invest in six projects, including \$500 million in the Mumbai Metro and \$455 million in rural roads in Andhra Pradesh.
- This also includes \$200 million to the National Investment and Infrastructure Fund.

### Additional info:

- The **Department of Economic Affairs** and the **Asian Infrastructure Investment Bank (AIIB)** will jointly host the third Annual Meeting of the AIIB in Mumbai.
- The theme for this year's meeting is "**Mobilizing Finance for Infrastructure: Innovation and Collaboration**" that will see leaders from varied organizations and levels of government to share ideas and experiences for creating a sustainable future through sound infrastructure investment.
- **India is part of AIIB, NDB, EBRD, ADB.**

## JICA

### Japan-India Cooperative Actions (JICA)

- The Program for Japan-India Cooperative Actions towards Sustainable Development

Goals in India aims to contribute to promotion of SDGs in India.

- It especially helps in social development by supporting the efforts by the Union Government to strengthen policy framework and implementation mechanism to help India achieve SDGs by 2030.
- Japan International Cooperation Agency (JICA) aims to promote international cooperation as the Japanese governmental agency in charge of official development assistance implementation.
- JICA which is an incorporated administrative institution under the Government of Japan is the world's largest bilateral donor agency.

### Official Development Assistance

- Official development assistance (ODA) is defined as government aid to promote the economic development and welfare of developing countries.
- Loans and credits for military purposes are excluded.
- Aid may be provided bilaterally, from donor to recipient or through a multilateral development agency such as the United Nations or the World Bank.

### Why in news?

- The Government of India and JICA sign Loan Agreements on Japan's Official Development Assistance Loan to India for development of roads and achieving SDGs.

## India-Central Asia Ties

### About

- The first India-Central Asia Dialogue will be held in Samarkand, Uzbekistan on January 12 and 13.
- The five Central Asia nations are Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan.
- The Indian side was represented by Union External Affairs Minister Sushma Swaraj.
- India and the Central Asian countries are bound together through shared history and cultural linkages.
- This dialogue will help to increase India's economic involvement in Central Asia.
- Developing viable connectivity options between India and Afghanistan and Central

Asia to further facilitate trade and economic activity in the region.

- Strengthen India’s engagement, including political, economic, development partnership and cultural, with all the Central Asian countries and take it to a new level.

**On Afghanistan**

- In the dialogue India supported its commitment to peace, security and stability of Afghanistan to promote inclusive Afghan-led, Afghan-owned and Afghan-controlled peace and reconciliation process.
- Though New Delhi does not hold policy talks with the Taliban, it indicated its support for an inclusive peace process in Afghanistan.
- India proposed to set up the India-Central Asia Development Group to take forward this development partnership.
- They also said Afghanistan as a “land link” in the region that will help in connectivity among the nations.

**Why in news?**

- The first India-Central Asia Dialogue will be held in Samarkand, Uzbekistan on January 12 and 13.

**Mini 2+2 dialogue**

**About**

- India and the U.S. have reviewed the progress of Industrial Security Annex (ISA) and the Basic Exchange and Cooperation Agreement for Geo-spatial Cooperation (BECA) agreements during the mini ‘2+2’ i meeting.
- The agreements are significant in the context of Asia Reassurance Initiative Act (ARIA).
- Under ARIA, around \$1.5 billion in funding will be channelled into improving US ties with partners in the Asian region in the next five years.
- Though the Act frames a strategy for the US in Asia, it singles out India as an important military partner.
- The inaugural 2+2 dialogue between India and U.S. was held last September.

Industrial Security Annex (ISA)	Basic Exchange and Cooperation Agreement (BECA)
ISA agreement allows sharing of	BECA will allow India and US to

classified information from the US government and US companies with the Indian private sector.	share geospatial and satellite data with each other.
Till now, sharing of information was limited to the Indian government and the defence public sector undertakings.	India has not signed BECA yet.
The ISA will give a boost to the Indian private sector looking for a greater role in defence manufacturing.	It is four foundational agreements

**Other foundational Agreements**

**General Security of Military Information Agreement (GSOMIA)**

- GSOMIA allows militaries to share the intelligence gathered by them.
- Signed by India in 2002.

**Logistics Exchange Memorandum of Agreement (LEMOA)**

- LEMOA allows both countries to have access to each other’s designated military facilities for refueling and other utilities.
- Signed by India in 2016.

**Communications and Information Security Memorandum of Agreement (CISMOA)**

- COMCASA (Communications Compatibility and Security Agreement) is the India specific version of CISMOA.
- Valid for 10 years, COMCASA aims to provide a legal framework for the transfer of highly sensitive communication security equipment from the US to India.
- Signed by India in 2018.

**Why in news?**

- The mini 2+2 meeting was attended by Defense and External Affairs Ministry from USA and India.

**India-US ties**

**Overview**

- The bilateral trade between two countries had increased from \$119 billion to \$140 billion in last two years.

- The trade has been increased in various sectors such as Private airlines which ordered about 300 aero planes to US companies.
- In the field of oil and India has committed to purchase \$5 billion from the U.S. every year.
- In the defense sector the trade is about 18 billion worth of defense equipment that are under implementation.
- With great integration in Indo-pacific region, the trade ties are expected to increase further in coming years.

#### Why in news?

- India's Ambassador to the U.S. Harsh Vardhan Shringla spoke to the American business community in his first major public engagement.

## H1 -B

### About

- The H-1B visa is a non-immigrant visa in the United States under the Immigration and Nationality act.
- This visa allows the U.S. employers to employ foreign workers to their companies on a temporary basis in case of some specialty occupations.
- The duration of such a visa is of 3 years and is extendable up to 6 years.
- According to a report by the New York Times, 70% of H1 B visas were granted to Indians.

### Think tank report

- A U.S. think tank called South Asia Center of the Atlantic Council reported that H1B workers are "underpaid, vulnerable to abuse" and placed in "poor working conditions".
- The think tank also asked for safeguards like higher wages, fair working conditions and greater employment rights for those working under the visa programme.

### Why in news?

- U.S. think tank called South Asia Center of the Atlantic Council released report on H1-B visa holders.

## India-UAE Agro ties

### Overview

- UAE and Saudi Arabia had decided to use India as a base to address their food security concerns.

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- The lands in India will be grown keeping a specific UAE market in mind, this system has been accepted by both countries.
- It will be a farm to port project which is similar to special economic zones.
- This step could increase India's potential of agriculture along with horticulture, dairy, plantation and fisheries in export sector.
- The Indian government has welcomed a proposal from the UAE for establishing food security parks, high-quality food processing infrastructure, integrated cold chains, value addition, preservation technology, packaging of food products and marketing.

### Confederation of Indian Industry

- CII is a non-government, not-for-profit, industry-led and industry-managed organization, playing a proactive role in India's development process.
- It was founded in 1895, it has around 9000 members, from the private as well as public sectors, including SMEs and MNCs.
- As a developmental institution working towards India's overall growth with a special focus on India@75 in 2022, the CII theme for 2018-19, India RISE: Responsible. Inclusive. Sustainable. Entrepreneurial emphasizes Industry's role in partnering Government to accelerate India's growth and development.

### Why in news?

- These were announced by Union Commerce Minister Suresh Prabhu in Partnership Summit.
- The Partnership Summit is the annual flagship event of the CII and has been organised in association with the Ministry of Commerce and Industry, Government of India and the Government of Maharashtra.

## Recognition of UK degrees in India

### About

- India and UK are negotiating agreement that will make Master's degree offered by UK universities Legal in India.
- They are not legal in India because they are said to be duration of about 12 months.
- This recognition if done will help Indian students who graduate from UK universities.

### Other initiatives

- To collaborate on higher education UK-India Education and Research Initiative

(UKIERI) was set up in 2005. In 2014 'Newton-Bhabha Fund' was announced to boost scientific research and innovation.

- To establish links between premier education institutes in India and UK, India-UK Education Forum was set up in 2008.
- Nehru Centre coordinates various activities and events to bolster cultural links between two countries which is the forum for cultural development of The High Commission of India in UK.

#### Why in news?

- A High-level two-day meeting between officials of both countries about the recognition of degrees.

## India-Iran Pharma ties

### About

- Rupee-Rial mechanism of international trade was an initiative undertaken by both India and Iran in an attempt to overcome the resistance of UN sanctions imposed on Iran back in 2012.
- Under this system, India and Iran did not trade in international currencies like USD and preferred to trade in Rupee through an UCO bank account.
- India will deposit payments for crude oil imported from Iran into escrow accounts of five of their banks held with state-run UCO Bank Ltd.
- An escrow account is a third-party account.
- It is a separate bank account to hold money which belongs to others and where the money parked will be released only under fulfilment of certain conditions of a contract.
- Iran used to receive money in its UCO bank account and in turn Iran used this money to buy goods from India.
- However, in 2015 when the sanctions were lifted this mechanism was significantly reduced.
- It helps India in continuing its oil supplies with Iran and make payment from the country.
- This system is a win-win situation for both the nations.

### Recent developments

- After the US sanction on Iran, India used the exemption given by US for trade with Iran.
- India again started using the rupee rial mechanism.

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- Indian refiners make payments in rupee for oil imports from Iran, to designated accounts maintained with UCO Bank.
- The pharma industry in Iran is self-sufficient of about 80%, while it imports the remaining from mostly European countries.
- With the US sanction, Indian Pharma companies has started exploring opportunities in Pharma sector in Iran.
- A portion thus received from India in UCO account is to be used by Iran to pay for imports from India, including pharmaceuticals.
- With Indian Pharma exports has been constantly decreasing from \$180.50 million in 2015-16 to \$160.33 million in 2016-17, this is vital opportunity that can be used by India.

#### Why in news?

- Iran is going to use Rupee rial pact for pharma products.

### Pharmaceutical Export Promotion Council of India (Pharmexcil)

- It is the authorized agency of the government of India for promotion of pharmaceutical exports from India.
- It was set up under the provisions of Foreign Trade Policy by the Ministry of Commerce and Industry in May 2004.
- Various pharmaceutical products, namely, bulk drugs, formulations, Biotech Products, Indian Systems of medicines, herbal products, diagnostics, clinical research, etc. are covered under its purview

## India's Human Rights Record

### Human Rights in India

- In January 2019, four UN Special committee members gave report on summary executions, torture, freedom of religion, and the situation of human rights defenders in India.
- It had a special mention about "extrajudicial" killings in Uttar Pradesh which was on socially vulnerable groups.
- The first ever UN report on human rights violations in Kashmir, conducted by the Office of the High Commissioner for Human Rights has also said the situation in the valley keeps on worsening.
- In the year 2018, India saw nine negative statements from the UN human rights.

- They include issues such as Assam National Register of Citizens process, online hate speech, the killing of journalist Gauri Lankesh, jailing of human rights defenders, deportation of Rohingya refugees, and excessive police response to protests.

#### **Major Takeaways**

- All these negative statements indicate that there has been enhanced scrutiny by international experts of the deteriorating human rights environment in India.

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- There has been magnification of domestic violation at global level.
- The tights of the citizen must be maintained by the country in order to maintain its prestige and help in welfare of the people.

#### **Why in news?**

- Statement issued by four UN Special committee members regarding Human rights in India.

## Science & Technology

### AI to detect Alzheimer's

#### What is AD (Alzheimer's disease)?

- Alzheimer's disease (AD), also referred to simply as Alzheimer's, is a chronic neurodegenerative disease that usually starts slowly and worsens over time.
- Neurodegeneration is the progressive loss of structure or function of neurons, including death of neurons.
- Many neurodegenerative diseases – including amyotrophic lateral sclerosis, Parkinson's disease, Alzheimer's disease, and Huntington's disease – occur as a result of neurodegenerative processes.
- As the Alzheimer's disease advances, symptoms can include problems with language, disorientation (including easily getting lost), mood swings, loss of motivation, not managing self care, and behavioural issues.
- As a person's condition declines, they often withdraw from family and society. Gradually, bodily functions are lost, ultimately leading to death.

#### What is Artificial Intelligence(AI)?

- In computer science, artificial intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans and other animals.
- Computer science defines AI research as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals.

#### Why in news?

- Haryana-based research team develops framework for Alzheimer's disease detection.

#### The research findings:

- So far there is no treatment for AD, detection at an early stage can help; but the diagnosis process is too slow involving many cognitive tests and MRI scans and the symptom of AD are also not easily visible.
- One such method used is the study of loss of **hippocampus tissue** of the brain which was usually associated with the onset of the disease. (*The hippocampus is a small region of the brain that forms part of the limbic system in the human brain and is primarily*

*associated with memory and spatial navigation.*)

- A team at the National Brain Research Centre (NBRC), Haryana, says that it has got a **framework in place that correlates glutathione levels in the brain, pictures of the hippocampus (taken using MRI) and performance on certain standard cognitive tests (for example, memory and motor-coordination). This can then be used to develop an algorithm to calculate the odds of an early onset of Alzheimer's.**
- Glutathione** is one of the body's core antioxidants, it scavenges on molecules that may cause cell and DNA damage.
- The researches are also working on making half an hour as the maximum time limit to diagnose.

### Monkey fever

#### Kyasanur Forest Disease (KFD):

- Kyasanur Forest disease (KFD) or Monkey Fever is a tick-borne **viral** hemorrhagic fever endemic to South Asia.
- The disease is caused by a virus belonging to the family **Flaviviridae**, which also includes yellow fever and dengue fever.
- The symptoms of the disease include a high fever with frontal headaches, followed by haemorrhagic symptoms, such as bleeding from the nasal cavity, throat, and gums, as well as gastrointestinal bleeding.
- The virus was identified in 1957 when it was isolated from a sick monkey from the Kyasanur Forest of Karnataka. Since then, between 400-500 human cases per year have been reported.
- Rodents, shrews, and monkeys are common hosts for KFDV after being bitten by an infected tick. KFDV can cause epizootics with high fatality in primates.
- Transmission to humans may occur after a tick bite or contact with an infected animal, most importantly a sick or recently dead monkey. No person-to-person transmission has been described.

#### Why in news?

- The outbreak of Kyasanur Forest Disease (KFD), also known as 'monkey fever' in Malnad region of the district, is showing no signs of abating as four cases have now

been reported from Tirthahalli taluk. The earlier cases were reported in Sagar taluk.

- With this, the total number of KFD cases in the district since December 2018 has reached 62. Six persons from Aralagodu died during this period.

## DAMINI

### Why in news?

- Last year during the pre-monsoon season a series of thunderstorm/dust storm affected the northern states and claimed about 200 lives.
- In view of this the India Meteorological Department will be implementing an end-to-end prediction system for predicting thunderstorms/lightning by April 2019.
- A mobile app called “DAMINI” has been developed to give alerts on impending lightning activity over the area.



## Damini app lightning alert

### What is a thunderstorm?

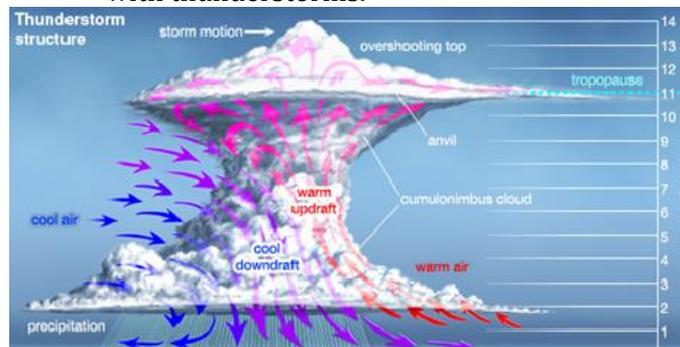
- Thunderstorms and tornadoes are **severe local storms**. They are of **short duration**, occurring over a small area but are violent.
- Thunderstorm is a storm with **thunder and lightning** and typically also heavy rain or hail.
- Thunderstorms mostly occur on ground where the **temperature is high**. Thunderstorms are less frequent on water bodies due to low temperature.
- Thunderstorms occur in a type of cloud known as a cumulonimbus.

### How it is formed?

- Thunderstorms result from the rapid upward movement of warm, moist air, sometimes along a front.
- As the warm, moist air moves upward, it cools, condenses, and forms a cumulonimbus cloud that can reach heights of over 20 kilometres (12 mi).
- As the rising air reaches its dew point temperature, water vapor condenses into water droplets or ice, reducing pressure locally within the thunderstorm cell. Any precipitation falls the long distance

Officers IAS Academy, Chennai through the clouds towards the Earth's surface.

- As the droplets fall, they collide with other droplets and become larger. The falling droplets create a downdraft as it pulls cold air with it, and this cold air spreads out at the Earth's surface, occasionally causing strong winds that are commonly associated with thunderstorms.



### What is dust storms?

- A dust storm is a meteorological phenomenon common in arid and semi-arid regions.
- Dust storms arise when a gust front or other strong wind blows loose sand and dirt from a dry surface.
- Fine particles are transported by saltation and suspension, a process that moves soil from one place and deposits it in another.

### About IMD:

- The India Meteorological Department (IMD), is an agency of the Ministry of Earth Sciences of the Government of India.
- It is the principal agency responsible for meteorological observations, weather forecasting and seismology. IMD is headquartered in Delhi.

## Science communication initiatives

### Why in news?

- The Department of Science and Technology (DST) along with Doordarshan (DD), Prasar Bharati launched two science communication initiatives, **DD Science and India Science**.

### About the initiatives:

- While DD Science is an one-hour slot on Doordarshan National channel, which will be telecast Monday to Saturday from 5 pm to 6 pm, India Science is a internet-based channel, which is available on any internet-enabled device, and will offer live, scheduled play and video-on-demand services.

- These initiatives are **aimed at improving the scientific temper of the society**. Given the immense role played by Doordashan in spreading awareness in polio eradication and family planning.
- The two science communication platforms are National level initiatives to elevate science into a celebration and bring it close to everyday life.
- DST and DD aim to make them jewels in the crown of the country for serving humanity for the furtherance of science.
- The two channels will have science-based documentaries, studio-based discussions, and virtual walkthroughs of scientific institutions, interviews and short films and will be completely free to access.

## UNNATI

### Why in news?

- **Unispace Nanosatellite Assembly & Training programme.**
- National space agency, the Indian Space Research Organisation (ISRO) on January 17, 2019 launched the UNNATI (UNispace Nano-satellite Assembly and Training by ISRO) programme at the U R Rao Satellite Centre, Bengaluru.
- UNNATI is a capacity building programme on nanosatellite development.

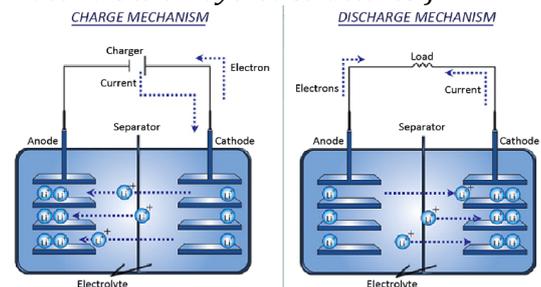
### About UNNATI programme:

- The UNNATI Programme is an ISRO initiative to commemorate the 50th anniversary of the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE+50).
- UNNATI programme is planned to be conducted by U R Rao Satellite Centre (URSC) of ISRO for 3 years in 3 batches and will target to benefit 90 officials from 45 countries.
- Each batch will be for 8-week duration and will comprise of theoretical course work on nanosatellite definition, utility, laws governing their impact on space debris, design drivers, reliability and quality assurance.
- It will also include hands-on training on assembly, integration and testing of nanosatellites.
- The first batch of this programme began on January 17 with 32 participants from 18 countries.

## India's First Lithium Ion Giga Factory

### Li-Ion battery

- Lithium-ion battery is type of rechargeable battery that contains several cells.
- Each cell consists of cathode, anode and electrolyte, separator between electrodes and current collectors.
- In it, **lithium ions move from negative electrode to positive electrode during discharge and back when charging.**
- Li-ion battery use intercalated lithium compound as one electrode material. (*In chemistry, intercalation is the reversible inclusion or insertion of a molecule into materials with layered structures.*)



### What is rechargeable battery:

- A rechargeable battery, storage battery, secondary cell, or accumulator is a type of electrical battery which can be charged, discharged into a load, and recharged many times, as opposed to a disposable or primary battery, which is supplied fully charged and discarded after use.
- It is composed of one or more electrochemical cells. The term "accumulator" is used as it accumulates and stores energy through a reversible electrochemical reaction.
- Rechargeable batteries typically initially cost more than disposable batteries, but have a much lower total cost of ownership and environmental impact, as they can be recharged inexpensively many times before they need replacing.
- Lithium ion battery is a rechargeable battery.

### Benefits of Li-Ion battery

- It is **light weighted** and is one-third the weight of lead acid batteries.
- It is nearly **100% efficient** in both charging and discharging as compared to lead battery which has 70% efficiency.
- It completely **discharges** i.e. 100% as compared to 80% for lead acid. It has life cycle of 5000 times or more compared to just 400-500 cycles in lead acid.

- It also maintains constant voltage throughout entire discharge cycle whereas voltage in lead acid battery drops consistently throughout its discharge cycle.
- It is much **cleaner technology** and is safer for environment as it does not have environmental impact as lead acid battery.
- It can power any electrical application without the need of physical wires-means wireless.

#### Why in news?

- Bharat Heavy Electricals Limited (BHEL) and Libcoin are in dialogue to form a world class consortium to initially build 1GWh lithium ion battery plant in India.
- Its capacity will be scaled up to 30GWh in due course.

#### Benefits of the project:

- With this, India has finally taken steps into its energy security and clean energy commitment to the world.
- This project will bring energy independence by replacing oil imports with abundant renewable. This project also includes "Made by India, for India", with focus on core-cost components manufactured domestically.
- It will also create integrated manufacturing ecosystem resulting in self-reliance and lower cost.
- Various Indian cities including Delhi have been struggling to cut down their pollution level for last several years and electric transportation has been considered as one of the viable approaches to cut down emission.
- The number of electric cars in the world already hit million-mark last year and the International Energy Agency has projected almost 140 million electric cars globally by 2030, if countries meet Paris climate accord targets, in which India has already committed to actively participate.

### Rapid diagnostic kit for chikungunya

#### About Chikungunya:

- Chikungunya is a mosquito-borne virus that causes a disease. It is transmitted by *Aedes aegypti* and *Aedes albopictus* mosquitoes.
- Its symptoms are characterised by abrupt fever and severe joint pain, often in hands and feet, and may include headache, muscle pain, joint swelling or rash.

- There is no specific antiviral drug treatment for chikungunya.

#### Why in news?

- An antigen-based chikungunya rapid diagnostic kit developed in 2013 by an international group of researchers was put to test in India, a dengue endemic country, to check its efficiency during co-infection with dengue.
- During the chikungunya outbreak that happened in Delhi in 2016, over 100 suspected chikungunya-dengue patients were tested using the new technology and the kit was able to detect chikungunya accurately 93% sensitivity and 95% specificity.

#### Benefits of Antigen based detection kit:

- The kit is designed to detect the chikungunya virus antigen in human serum.
- Current tests for chikungunya look for the antibody produced by our body against the virus.
- This is the first time a technology has been developed to identify the virus antigen.
- The kit was able to detect the antigen even in dengue co-infected patient and did not cross-react with dengue positive or chikungunya negative patients.
- The cross-reactivity was also tested with other fever-causing diseases like malaria, typhoid, hepatitis B and C and Salmonella infection. The new kit did not react with any of the samples.
- The kit is also faster than the DNA- and antibody-based methods and can give results in 15-30 minutes.
- The antigen-based diagnostic kit is also cost-effective.

#### NOTE:

- **Antibodies**, also called immunoglobulins, Y-shaped molecules are proteins manufactured by the body that help fight against foreign substances called antigens.
- **Antigens** are any substance that stimulates the immune system to produce antibodies. Antigens can be bacteria, viruses, or fungi that cause infection and disease.

### Dark side of the Moon

#### Why in news?

- A study using observations from Chandrayaan 1 mission has **found how plasma particles from the solar wind make their way into the Moon's night**

side, filling up the wake(void) region, long thought to be devoid of plasma particles.

- This has significance in understanding bodies like the Moon which do not have global magnetic fields.

#### Chandrayaan 1 data:

- The observations from the Sub-keV Atom Reflecting Analyser (SARA) experiment on Chandrayaan-1.
- In recent times, there has been a huge interest in understanding the plasma environment of the Moon, which is generated mainly by its interaction with the solar plasma wind flowing towards it **from the Sun**.
- This **plasma wind** consists of **charged particles** such as protons and is partly absorbed by the side of the Moon facing the sun.
- The rest of the solar plasma wind incident on the Moon flows around it, but leaves a wake (a void) on the side not facing the sun (the night-side of the Moon).
- Earlier, it was believed that this wake was devoid of any particles. But recent Moon missions such as Chandrayaan-1, Kaguya, Chang'e-1 and Artemis have found evidence of refilling of near lunar wake (heights of 100 km to 200 km above the lunar surface on the night side) with solar wind protons.

#### How does the refill happen?

- Unlike the Earth, the Moon has no global magnetic field originating from a magnetized core. It has weak crustal fields that are too small to shield it globally from charged solar plasma particles incident on it.
- Small scale crustal magnetic fields on the Moon can also cause scattering of impinging solar wind protons back into space.
- At some regions the crustal fields are quite strong and these are known as **magnetic anomalies**. The plasma particles scatter off these anomalous crustal fields.
- This paper shows that such particles scattered from the lunar magnetic regions on the day side can get transported to the night side of the Moon, thereby contributing to plasma refilling in the near wake region.

#### Importance of the study:

- The interaction between the Moon and the solar plasma is a topic of interest now because understanding it can help us study any celestial body which has no atmosphere or global magnetic field, such as asteroids and some planetary satellite.

## Cutting red meat and sugar

### Why in news?

- A recent Lancet report by EAT-Lancet Commission has provided a nutritious and sustainable diet plan

### Highlights from the report:

- According to the report, over the past 50 years, dominant diets have become nutritionally suboptimal, which calls for a global transformation of the food system.
- The study has recommended a diet plan which could potentially avert between 10.9 million and 11.6 million premature deaths globally per year, reducing adult deaths by 19-23.6%.
- The Commission recommended that the average adult, whose daily requirement is about 2,500 calories, must strive to source around 800 calories from whole grain, 204 calories from fruits and vegetables, and not more than 30 calories from red meat.
- It also suggested that the ideal diet should have no “added sugar” or unhealthy saturated fats.

Food	Macronutrient intake (gm/day)	Caloric intake (kcal/day)
Whole grains	232	811
Tubers	50	39
All vegetables	300	78
Fruits	200	126
Dairy foods	250	153
Beef, lamb, pork	14	30
Chicken	29	62
Eggs	13	19
Fish	28	40
Legumes	75	284
All sugars	31	120

### Report suggestions:

- Introduction of policies to encourage people to choose healthy diets
- improving availability and access to healthy food through improved logistics and storage
- moving from high volumes of crops to producing varied nutrient-rich crops

## Delay in human spaceflight plan

### Indian Human Spaceflight Programme:

- The Indian Human Spaceflight Programme (HSP) was created by the Indian Space Research Organisation (ISRO) to develop

the technology needed to launch crewed orbital spacecraft into low Earth orbit.

- The first crewed flight is planned with a spacecraft called Gaganyaan on a home-grown GSLV-III rocket.

#### **Gaganyaan Mission:**

- It is India's first manned space mission. Under it, India is planning to send three humans (Gaganyatris) into space i.e. in low earth orbit (LEO) by 2022 i.e. by 75th Independence Day for period of five to seven days.
- Under this mission, crew of three astronauts will conduct experiments on microgravity in space.
- This mission will make India fourth nation in the world after USA, Russia and China to launch human spaceflight mission.
- **Objectives of Gaganyaan Mission:** Enhance of science and technology levels in

Officers IAS Academy, Chennai the country, serve as national project involving several institutes, academia and industry, improve of industrial growth, inspire youth, develop technology for social benefits and improve international collaboration.

#### **Why in news?**

- Mr. Madhavan Nair, the former ISRO chairman, who headed the space agency from 2003 to 2009, attributed the delay to political factors and the changed priorities of the subsequent ISRO management.
- He said the Indian Human space project was supposed to be launched on 2015 according to the policy that ISRO made on 2008-09.
- But, unfortunately due to various political factors and probably, the attitude of the subsequent management in ISRO it was put in cold storage, he said.

## Environment

### Turtle festival

#### Why in news?

- Odisha's Puri beach witnessed its first turtle festival on January 13, 2019, where tourists, researchers and environmentalists gathered to promote eco-tourism, which in turn could help conserve Olive Ridley turtles.
- Aimed at promoting and revering the idea of conserving the vulnerable turtles, was organised by Cox & Kings Foundation, a philanthropic arm the travel company, in partnership with Humane Society International-India (HIS-India) and few local organisations.

#### Background:

- *Odisha has half of the world's Olive Ridley turtle population and 90% of India's turtle population lives in the state.*
- Despite that no actions have been taken for their conservation.
- Therefore, the government should develop some infrastructure near the turtle nesting sites at Devi and Rusikulya rivers, the two major nesting grounds.
- Turtles and tourism go together in Australia, Coast Rica, Mexico, Sri Lanka and other countries, where tourists visit beaches to see the turtles by paying hefty amounts. But, Odisha is yet to attract tourists for this.



- Artificial turtle hatcheries constructed by forest officials on nesting grounds to protect the eggs could be used to attract tourists. Also, after emergence of

hatchlings, the tourists would be able to release the baby turtles, said Hemant Rout, secretary of Gahiramatha Marine Turtle and Mangrove Conservation Society.

#### Types of turtles:

- **There are five species in Indian waters** — Leatherback (Vulnerable), Loggerhead (Endangered), Hawksbill (Critically Endangered), Green (Endangered) and Olive Ridley.
- In India, sea turtles are protected under **the Indian Wildlife Protection Act of 1972**.
- **The Olive ridley turtles are the smallest and most abundant** of all sea turtles found in the world, inhabiting warm waters of the Pacific, Atlantic and Indian oceans.
- The Olive ridley is the most numerous among the sea turtles found in India and is well **known for its arribadas, or annual mass nestings** when thousands of turtles migrate to the breeding ground to nest simultaneously.
- Recognized as **Vulnerable by the IUCN Red list**.
- International trade in these turtles and their products is banned **under CITES Appendix I**.

#### Other initiatives by Odisha:

- *Operation Kachhapa'*: Conservation of the Olive Ridley Sea Turtle was launched by the Wildlife Protection Society of India in collaboration with the Orissa State Forest Department and the Wildlife Society of Orissa and other local NGOs.
- *To reduce accidental killing in India, the Orissa government has made it mandatory for trawls to use Turtle Excluder Devices (TEDs), a net specially designed with an exit cover which allows the turtles to escape while retaining the catch.*

### Crocodile census

#### Why in news?

- Crocodile census released by **Odisha** and it states that the **population of the saltwater or estuarine crocodile (Crocodylus porosus) has increased** in the water bodies of Odisha's Bhitarkanika National Park and its nearby areas in Kendrapara district.

- 1,742 individuals have been recorded in this year's annual reptile census.
- The increase in population was primarily due to the far-sighted measures of the government.

#### Types of crocodiles:

- There are *three species of crocodilians: saltwater, Mugger and Gharial.*
- The **mugger crocodile**, also called the Indian crocodile, or marsh crocodile, is found throughout the Indian subcontinent.
- It is listed as **vulnerable by IUCN.**
- The mugger is mainly a **freshwater species**, and found in lakes, rivers and marshes.
- The **Gharial** or **fish eating crocodile is native to the Indian subcontinent.**
- It is listed as a **Critically Endangered by IUCN.**
- Small released populations are present and increasing in the rivers of the National Chambal Sanctuary, Katarniaghat Wildlife Sanctuary, Son River Sanctuary and the rainforest biome of Mahanadi in Satkosia Gorge Sanctuary, Orissa.
- Saltwater Crocodile is *the largest of all living reptiles. It listed as least concern by IUCN. It is found throughout the east coast of India.*

### Sita Rama Lift Irrigation Project

#### Why in news?

- The Union Ministry of Environment, Forest and Climate Change has given its approval for the Sita Rama Lift Irrigation Project of Telangana.
- Aims to divert Godavari river water to irrigate 2.72 lakh hectares in three districts of Telangana state.
- The project aims to provide water for irrigation as well as to enroute tanks, villages, towns and supplement some of the existing/ proposed irrigation schemes.

#### Other projects in Telangana:

- The Kaleswaram Lift Irrigation Project (KLIP) envisages construction of barrage across Godavari River after the confluence by its tributary Pranahita near Madigadda village in Telangana's Karimnagar district. It is redesigned version of Pranahitha-Chevella Lift Irrigation Scheme, proposed in 2007 by the undivided Andhra Pradesh Government.

### Asian waterbird census

#### Why in news?

- A waterbird survey conducted in the Upper Kuttanad region of Kerala has recorded 16,767 birds of 47 continental and local species.
- The survey, conducted as part of the annual Asian Waterbird Census, has spotted three new species are **Greater flamingo, Grey-headed lapwing, and Blue-cheeked bee-eater.**
- The number of birds at **Soor Sarovar Bird Sanctuary(UP)**, spotted by Asian Waterbird Census (AWC) has increased by almost 75 per cent.

#### What are waterbirds?

- According to Wetlands International (WI), waterbirds are defined as species of birds that are ecologically dependent on wetlands.
- These birds are considered to be an important health indicator of wetlands of a region.



**Greater Flamingo.**



**Grey-headed lapwing.**



**Blue-cheeked bee-eater.**

#### About AWC:

- The Asian Waterbird Census (AWC) is an **international programme** that focuses on monitoring the status of waterbirds and wetlands.

- The census is carried out each January as a voluntary activity at national and local level.
- The AWC is co-coordinated **by Wetlands International**- as part of global programme, the “International Waterbird Census”.
- The census has three major objectives:
  1. To obtain information on an annual basis of waterbird population at wetlands in the region during the non-breeding period of most species (January), as a basis for evaluation of sites and monitoring of population.
  2. To monitor on an annual basis the status and condition of wetlands.
  3. To encourage greater interest in waterbirds and wetlands amongst people, and thereby promote the conservation of wetlands and waterbirds in the region.
- The data collected for the AWC is being used to provide information on wetlands and waterbirds and to encourage local or national conservation measures for important wetlands.
- The primary role of Wetlands International in coordinating the census is to raise awareness on the importance of waterbirds and wetlands at international level and for this it collates information at regional level.
- The census is primarily carried out by volunteers from all walks of life: university and school staff and students, nature club members, amateur and professional ornithologists, government and non-governmental agencies and others. Sites covered include rivers, lakes, reservoirs, tanks, swamps, coastal sites, mangrove and mudflats, reefs, sandy beaches, etc.
- All species of waterbirds associated with wetlands are entered onto standardized count forms.
- In India, the AWC is **annually coordinated by the Bombay Natural history Society (BNHS) and Wetlands International.**

- BNHS is a non governmental Organization (NGO) founded in the year **1883**.
- It engages itself in the conservation of nature and natural resources and also in the

research and conservation of endangered species.

- Its mission is to conserve nature, primarily biological diversity through action based on research, education and public awareness.

#### More about census:

- Soor Sarovar Bird Sanctuary is a unique wetland for waterbirds located on the **banks of Yamuna** and it's one of the **467 important bird and biodiversity areas (IBAs)** in India.
- No new species were found, but a large flock of greater flamingos and mixed flock of pelicans (green white and dalmatian) were spotted.
- The 2019 census was carried out in **collaboration with the National Chambal Sanctuary** Project, Uttar Pradesh Wildlife department and there was an active participation by volunteer from Wildlife SOS, Agra and wildlife staff of the sanctuary AWC 2019.

#### What is IBA?

- An **Important Bird and Biodiversity Area (IBA)** is an **area** identified using an internationally agreed set of criteria as being globally **important** for the conservation of **bird** populations.
- **IBA** was developed and sites are identified by **BirdLife International.**

#### Birdlife International:

- It is a **global partnership of conservation organisations** that strives to conserve birds, their habitats and global biodiversity, working with people towards sustainability in the use of natural resources
- It is world's largest conservation partnerships for conservation of birds and their habitats.
- It was earlier known as International Committee for Bird Preservation.
- Its global office is in UK with 6 regional offices – Africa, the Americas, Asia, Europe and Central Asia, the Middle East and the Pacific.
- It publishes a quarterly magazine, **World Birdwatch**, which contains recent news and authoritative articles about birds, their habitats, and their conservation around the world.

- It is the **official Red List authority for birds**, for the International Union for Conservation of Nature.

## Trishna Gas project

### Why in news?

- The *National Wildlife Board* has given its approval for the *Trishna Gas project* of *ONGC* which falls in the *Trishna Wildlife Sanctuary* in the Gomati district of Tripura.
- ONGC has discovered 10-12 gas bearing wells in the Trishna Wildlife sanctuary.

### About National Wildlife Board:

- National Board for Wild Life is a “**Statutory Organization**” constituted under the **Wildlife Protection Act, 1972**.
- Theoretically, the board is “**advisory**” in nature and advises the Central Government on framing policies and measures for conservation of wildlife in the country.
- However, it is a very important body because it serves as apex body to review all wildlife-related matters and approve projects in and around national parks and sanctuaries.
- Primary function of the Board is to **promote the conservation and development of wildlife and forests**.
- It has power to review all wildlife-related matters and approve projects in and around national parks and sanctuaries.
- No alternation of boundaries in national parks and wildlife sanctuaries can be done without approval of the NBWL.**
- The NBWL is **chaired by the Prime Minister**. It has 47 members including the Prime Minister. Among these, 19 members are ex-officio members.
- Other members include three Members of Parliament (two from Lok Sabha and one from Rajya Sabha), five NGOs and 10 eminent ecologists, conservationists and environmentalists.

### Trishna wildlife sanctuary:

- The *Trishna Wildlife Sanctuary (Tripura)* was established in **1988**.
- The vegetations in the sanctuary fall under four broad categories of tropical semi-evergreen forest, the east Himalayan lower Bhanar sal, Moist mixed deciduous forest and the Savanah woodland.
- Prominent medicinal plant species are Kurcha, Tulsi, Vasak, Sarpaganda,

Officers IAS Academy, Chennai Rudraksha, Bel, Chirata, and Kalamegh can be found here.

- The wildlife prominent in the sanctuary comprises of Indian Gaur(bison), Deer, Hooklock Gibbon, Golden Langur, Capped Langur, Pheasants and Reptiles.

## Common Pochard

### Why in news?

- Delay in migratory birds like ‘Common Pochard’ visiting Delhi has worried the environmentalists and bird-lovers.

### About common Pochard:



- Common Pochard is a medium-sized duck.
- It migrates to India from central Asia in October.
- The number of the species is declining globally because of climate and anthropological reasons.
- IUCN status: Vulnerable.**

## Ganga pollution

### Why in news?

- Four-and-a-half years after the Centre launched its flagship **Namami Gange programme** to clean up the Ganga, a government- commissioned assessment has found that 66 towns and cities along the river still have **nullahs or drains** flowing directly into the Ganga.
- Almost 85% of these nullahs do not even have screens set up to stop garbage from entering the river.

### More about the assessment:

- Of the 92 towns surveyed, 72 still have old or legacy dump sites on the ghats. Only 19 towns have a municipal solid waste plant, according to an assessment done by the Quality Council of India (QCI).
- While much of the focus of Namami Gange over the last four years has been on liquid waste management and sewage treatment plants, the Centre is now turning its focus to solid waste management as well, under

the aegis of the Swachh Bharat Mission (Urban).

- The QCI assessment graded the towns on four parameters:
  1. Overall cleanliness, which involved the dump sites and garbage vulnerable points present near the ghats, as well as the presence of solid waste floating on the river's surface;
  2. The availability of a municipal solid waste plant;
  3. The installation and maintenance of screens placed over nullahs;
  4. Solid waste management services such as sweeping and cleaning arrangements, litter bins and anti-littering signs and a trash cleaner to trap solid waste floating on the river.

#### Quality Council of India (QCI):

- Quality Council of India (QCI) was set up in 1997 as an **autonomous body**.
- It was setup jointly by the Government of India and the Indian Industry represented by the three premier industry associations i.e.
  - Associated Chambers of Commerce and Industry of India (ASSOCHAM),
  - Confederation of Indian Industry (CII) and
  - Federation of Indian Chambers of Commerce and Industry (FICCI)
- It aims to establish and operate national accreditation structure and promote quality through National Quality Campaign.
- The **Department of Industrial Policy & Promotion**, Ministry of Commerce & Industry, is the nodal ministry for QCI.

- **Chairman of QCI is appointed by the Prime Minister** on recommendation of the industry to the government.

## Northeast is home to six new lizards

### Why in news?

- Not just remote forests, even crowded cities could be hiding new species. Researchers have discovered six new species of bent-toed geckos – a type of small lizard – from northeastern India, and one of them is from Assam's capital, Guwahati.

### More about the discoveries:



- While researchers found the Guwahati bent-toed gecko (*Cyrtodactylus guwahatiensis*, named after the city) near a small hillock in the urban sprawl of Guwahati city, the **Kaziranga bent-toed gecko**, the Jaintia bent-toed gecko and the Nagaland bent-toed gecko have been discovered from Assam's Kaziranga National Park, the **Jaintia hills of Meghalaya** and Khonoma village in Nagaland, respectively.
- The discoveries – by an international team from institutes including Bengaluru's National Centre for Biological Sciences and London's The Natural History Museum – have been published in **Zootaxa**. (Zootaxa is a peer-reviewed scientific mega journal for animal taxonomists.)

## Culture

### Sagar Island for Makar Sankranti

#### Why in news?

- Close to 26 lakh devotees have arrived on Sagar Island to take a holy dip at the confluence of the Ganga and the Bay of Bengal on occasion of Makar Sankranti.

#### About Sagar Island:

- Sagar island is an island in the **Ganges delta, lying on the continental shelf of Bay of Bengal, south of Kolkata.**
- Although Sagar island is a part of Sunderban Administration, **it does not have any tiger habitation or mangrove forests** or small river tributaries as is characteristic of the overall sunderban delta.
- Arrangements have been made to ensure that the Gangasagar Mela is a clean, **'Nirmal Mela'**.
- Plastic has not been allowed; arrangements have been made to ensure flowers and other biodegradables are not allowed in the water.

### Bhogali Bihu

#### Why in news?

- A contentious Bill to legitimize the stay of non-Muslim migrants from India's neighbourhood has made many in Assam decide to break an age-old tradition by fasting during an agrarian festival of feasting.

#### About Bhogali Bihu:



- Bhogali Bihu is to Assam what Pongal is to Tamil Nadu and Lohri to Punjab.**
- Uruka**, is the **precursor to Magh Bihu to be celebrated a day before.**
- Uruka is marked by lighting bonfires and feasting at a Meji or Bhelaghar, a temporary structure made with bamboo, hay and dried plantain leaves.
- Traditionally conical, the **Meji** turned designer and thematic a few years ago,

spurring contests for the best structures across Assam.

- Let the celebration be subdued this time as a mark of protest. We also urge people to burn copies of the anti-race Bill at the Meji," Hiren Gohain, president of the Forum Against Citizenship (Amendment) Bill, said.
- The police had last week filed a sedition case against Dr.Gohain, 80, and two others for allegedly stoking separatism while mobilizing support against the Bill.
- The Gauhati High Court granted them bail a day later.

### Kumbha Mela

#### Why in news?

- The world's largest religious and cultural human congregation, 'Kumbh 2019' began at Prayagraj (erstwhile Allahabad), Uttar Pradesh on January 15, 2019.*

#### About Kumbh Mela:

- The Kumbh Mela (the festival of the sacred pitcher) is **anchored in Hindu mythology.**
- It is **the largest public gathering and collective act of faith, anywhere in the world.**
- Crowds gather at the sacred **confluence of the Ganga, the Yamuna, and the mystical Sarasvati.**
- Primarily, this congregation includes Ascetics, Saints, Sadhus, Sadhvis, Kalpvasis, and Pilgrims from all walks of life.
- The Mela was **included in the list of "Intangible Cultural Heritage of Humanity" by UNESCO in 2017.**

#### How it is celebrated:



- Kumbh Mela is celebrated **four times over a course of 12 years.**
- The **geographical location of Kumbh Mela spans over four locations** in India

and the Mela site keeps rotating between one of the four pilgrimage places on four sacred rivers as listed below:

- **Haridwar** on the Ganges in Uttarakhand.
- **Ujjain** on the Shipra in Madhya Pradesh.
- **Nashik** on the Godavari in Maharashtra.
- **Prayagraj** at the confluence of the Ganges, the Yamuna, and the mythical Sarasvati in Uttar Pradesh.

#### Selection of site:

- Each site's **celebration is based on a distinct set of astrological positions of the Sun, the Moon, and the Jupiter.**
- The celebrations occur at the exact moment when these positions are fully occupied, as it is considered to be the holiest time in Hinduism.

#### Special arrangements for delegates of "Pravasi Bhartiya Diwas" for participating in the Kumbh Mela:

- Special arrangements have been made for the delegates of "PravasiBhartiyaDiwas" for participating in the KumbhMela at Prayagraj, Uttar Pradesh.
- The PravasiBharatiyaDiwas is scheduled to commence at Varanasi, Uttar Pradesh on 21st January.
- Around ten thousand participants are expected to attend the colourful convention.
- On 24th January, the participants would arrive in Prayagraj to be the part of ongoing largest spiritual gathering on earth, the Kumbh, where arrangements are in place for holy bathing at Sangam.
- **Ganga Mahotsava**, an annual much awaited cultural event showcasing culture and heritage is being also organised during January 21 to 23 at Ganga Ghats by Govt. of UP. Ganga Arti at Ghat of Kashi is well known among tourists.

#### Pravasi Bhartiya Divas:

- Pravasi Bharatiya Divas, is a celebratory day observed on 9 January by the Government of India to mark the contribution of the overseas Indian community towards the development of India.
- The day commemorates the return of Mahatma Gandhi from South Africa to Mumbai on 9 January 1915.
- Established in 2000, it is sponsored by the Ministry of External Affairs of the Government of India, FICCI and the CII.

Officers IAS Academy, Chennai

- The theme of PBD Convention 2019 is "Role of Indian Diaspora in building New India".

#### First Shahi Snan of Kumbh at Prayagraj Today:

- First bathing festival of Makar Sankranti of Prayagraj Kumbh is being held on 15 Jan 2019.
- First Shahi Snan royal bathing of Akharas was also held on the occasion.
- Large number of saints and Searas, common pilgrims and tourists from across the globe are continuously reaching Prayagraj to take Holi dip on the pious occasion of Makar Sankranti at the Sangam the confluence of rivers Ganga, Yamuna and mythical Saraswati.

#### Hunar Haat

##### Hunar Haat:

- Hunar Haat exhibitions are organised by the **Ministry of Minority affairs** under its USTAAD (Upgrading the Skills & Training in Traditional Arts/Crafts for Development) scheme.
- USTAAD scheme aims to preserve the heritage of traditional arts and crafts of minority communities, build the capacity of traditional craftspersons and artisans and establish linkages of traditional skills with the global market
- Together with boosting the skill of craftsmen, weavers and artisans engaged in the traditional ancestral work, USTAAD scheme aims to enhance the market access to the traditional arts and crafts, so that the rich heritage of the minority communities are preserved for future generations.

##### Benefits from Hunar Haat:

- It is aimed at "Development with Dignity" of the artisans and craftsmen from the minority communities.
- It plays an important role in national and international branding of the heritage of master artisans in India.
- Projecting the talent of Indian artisans.
- Build a credible brand of Indigenous Talent of Indian artisans and craftsmen.
- Promoting the artisan and craftsmen heritage of India which had been marginalised for a long time.
- Provides an Empowerment & Employment Exchange platform for master artisans and craftsmen.
- Provides a platform to fulfil the commitments under "Make in India", "Stand up India" and "Startup India".

### Why in news?

- Finance Minister Shri Arun Jaitley and Union Minority Affairs Minister Shri Mukhtar Abbas Naqvi inaugurated Hunar Haat exhibitions in New Delhi on 13 Jan 2019.

### Spiritual Circuit



### Why in news?

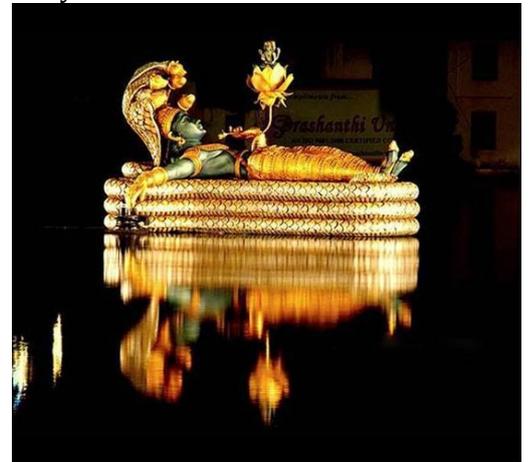
- Prime Minister of India, Shri Narendra Modi inaugurated the project "Development of Spiritual Circuit: Sree Padmanabha Swamy Temple-Aranmula-Sabarimala" being implemented under the Swadesh Darshan Scheme of Ministry of Tourism.

### About Swadesh Darshan Scheme:

- Ministry/Department : Ministry of Tourism
- Objective : To develop theme based tourist circuits in the country
- Scheme:
- Tourist circuits will be developed on the principles of high tourist value, competitiveness and sustainability in an integrated manner
- They will be developed by synergizing efforts to focus on concerns and needs of all stakeholders to enrich tourist experience and enhance employment opportunities
- Under this scheme, 13 thematic circuits have been identified for development
- They are Buddhist Circuit, North-East India Circuit, Coastal Circuit, Himalayan Circuit, Krishna Circuit, Desert Circuit, Eco Circuit, Wildlife Circuit, Tribal Circuit, Rural Circuit, Spiritual Circuit, Ramayana Circuit and Heritage Circuit
- The scheme is 100% centrally funded for the project components undertaken for public funding
- It also leverages Corporate Social Responsibility (CSR) initiatives of Central Public Sector Undertakings and corporate sector.

### About Shree Padmanabha Swamy Temple:

- Padmanabhaswamy Temple is located in Thiruvananthapuram, Kerala, India.
- The temple is built in an intricate fusion of the indigenous Kerala style and the Tamil style.
- The Supreme Principal Deity Para brahman, Maha Vishnu/Adi Narayana is enshrined in the "Anantha Shayanam" posture, the eternal yogic sleep on the serpent Adishesha.
- The shrine is currently run by a trust headed by the royal family of Travancore. The Maharajahs of Travancore are Cheras and descendants of the great saint Kulashekara Alwar.
- It is one of the 108 sacred Vishnu temples or Divya Desams in India.



### 'SANJHI -MUJH MEIN KALAKAR'

#### SĀNJHI -MUJH MEIN KALĀKĀR':

- Sangeet Natak Akademi (SNA) the National Academy of Music, Dance and Drama will launch the second phase of the Web Campaign 'SANJHI-MUJH MEIN KALAKAR'.
- It is an initiative to document and promote the Intangible Cultural Heritage (ICH) and diverse cultural traditions of the country by direct public-participation.
- The literal meaning of the term SANJHI is "to share" and "to partner" and the cultural traditions of our country has developed and prospered on the notions of harmony.
- This is a unique talent search where the participant will showcase their talent in the fields of music, dance, drama, puppetry, folk and tribal arts, culinary skills, painting, sculpture etc.
- The first phase of this campaign was earlier initiated in the month of November 2018 during the festival season of Diwali.

- There was mass participation and with great enthusiasm, people uploaded various audios and videos for music, dance, poetry recitation etc. and images for visual art forms like painting, craftwork, terracotta work, rangoli, written poetry, etc.
- The second phase of this campaign has its main focus area like the folk, traditional, customary, socially events and ritualistic art forms – woven as a cultural fabric around the harvest festival season of January.
- It is widely celebrated as various nomenclatures like Makar Sankranti, Pongal, Lohri, Bhogali Bihu, Torgya, Uttarayan, Attukkal Pongal, etc.

#### Objective:

- It intends to bring forth such forms that are aligned with the domains of intangible cultural heritage as per the Convention of Safeguarding the ICH under UNESCO:
  - Oral traditions and expressions, including language as a vehicle of the intangible cultural heritage;
  - Performing arts;
  - Social practices, rituals and festive events;
  - Knowledge and practices concerning nature and the universe;
  - Traditional craftsmanship.

#### About The Sangeet Natak Akademi (SNA) –

- Founded in 31st May 1952
- Head Quarters: New Delhi
- The Sangeet Natak Akademi – India’s national academy for music, dance and drama – is the first National Academy of the arts set-up by the Republic of India.
- It is presently an Autonomous Body of the Ministry of Culture, and is fully funded by the Government for implementation of its schemes and programmes.
- It is the nodal agency of the Ministry of Culture, Govt. of India to coordinate the matters related to Intangible Cultural Heritage and various UNESCO Conventions addressing Cultural Diversity and promotion and dissemination of multifarious cultural traditions and expressions of the country.

#### What is Intangible Cultural Heritage?

- The term ‘cultural heritage’ has changed content considerably in recent decades,

Officers IAS Academy, Chennai partially owing to the instruments developed by UNESCO.

- Cultural heritage does not end at monuments and collections of objects. It also includes traditions or living expressions inherited from our ancestors and passed on to our descendants, such as oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe or the knowledge and skills to produce traditional crafts.

## National Museum of Indian Cinema

### Why in news?

- Prime Minister Narendra Modi inaugurated the National Museum of Indian Cinema (NMIC) in Mumbai on January 19, 2019.

### National Museum of Indian Cinema:

- Built at a cost of Rs 140.61 crore, the museum depicts the journey of over a century of Indian cinema in a story telling mode with the help of visuals, graphics, artifacts, interactive exhibits and multimedia expositions.
- The Museum is housed in two buildings – the New Museum Building and the 19th century historic palace Gulshan Mahal – in the Films Division campus in Mumbai.
- The Gulshan Mahal is an ASI Grade-II Heritage Structure which has been restored as part of the NMIC project.
- It is divided into 9 sections, namely, The Origin of Cinema, Cinema comes to India, Indian Silent Film, Advent of Sound, The Studio Era, The impact of World War II, Creative Resonance, New Wave and Beyond and Regional Cinema.



### Four Exhibition Halls:

The New Museum Building has four Exhibition Halls:

- **Gandhi & Cinema:** It depicts the movies made on the life Mahatma Gandhi and

showcases the deep impact his life had on cinema.

- **Children's Film Studio:** It gives visitors an opportunity to explore the science, technology and art behind filmmaking. It offers hands on experience on various facets associated with making cinema like camera, light, shooting, and experience of acting presented in an interactive format. The exhibits displayed include chroma studio, animation studio, and makeover studio.

- **Technology, creativity & Indian cinema:** It showcases the creative use of technology by Indian film makers over the years to produce cinematographic impact on the silver screen.
- **Cinema across India:** It showcases the charismatic kaleidoscopic presence of the vibrant cinematographic culture across India.

## Miscellaneous

### Philip Kotler Presidential Award

#### Why in news?

- Prime Minister Narendra Modi was awarded first ever Philip Kotler Presidential Award.
- PM Modi was selected for his outstanding leadership for the nation.
- Under PM Modi's leadership, India is now identified as the centre for innovation and value-added manufacturing (Make in India), as well as a global hub for professional services such as information technology, accounting and finance.

#### About the award:

- Philip Kotler Presidential Award aims to spread examples of individuals and companies who create an innovative culture for the economic, social and technological advancements of an industry or a country.
- Philip Kotler, a professor of marketing at Northwestern University, Kellogg School of Management is also known as 'Father of Modern Marketing.'
- It is constituted to honour mastery in the field of marketing and management.

### Gandhi Peace prize

#### Why in news?

- The Gandhi Peace Prize for the years 2015, 2016, 2017 and 2018 has been announced by the Union Ministry of Culture.
- The awardees were selected by the jury under the Chairmanship of Prime Minister Narendra Modi.

#### About the peace prize:

- The Gandhi Peace Prize was instituted in the year 1995 on the occasion of the 125th birth anniversary of Mahatma Gandhi.
- This annual award is given to individuals and institutions for their contributions towards social, economic and political transformation through non-violence and other Gandhian methods.
- The award carries a **cash prize** of Rs.1crore, a **citation and a Plaque** as well as an exquisite traditional handicraft/handloom item.
- Gandhi Peace Prize is **open to all persons regardless of nationality, race, creed or gender.**

- Notably, a jury consisting of the Prime Minister of India, the Leader of the Opposition in the Lok Sabha, the Chief Justice of India and two other eminent persons decides the awardee each year.
- Therefore, for this year, the jury comprised of Prime Minister Narendra Modi, Congress Leader Mallikarjun Kharge, CJI Ranjan Gogoi, Lok Sabha Speaker Sumitra Mahajan and BJP veteran Mr. L.K.Advani.

#### Who can win Gandhi Peace prize?

- Generally, proposals coming only from competent persons invited to nominate are considered.
- However, a proposal cannot be deemed invalid for consideration by the jury, solely on the ground of not having emanated from competent persons.
- If, however, none of the proposals merit recognition, the jury is free to withhold the award for that particular year.
- **Only achievements within 10 years immediately preceding the nomination are considered for the award.**
- An older work/cause may, however, be considered in case its significance has not become apparent until recently.
- A published written work only would be considered eligible for validation.
- Julius K Nyerere, former President of Tanzania, was the first recipient of the Gandhi Peace Prize Award in 1995.

### Global aviation summit 2019

#### Why in news?

- The Union Minister of Civil Aviation, Suresh Prabhu on January 15, 2019 inaugurated the Global Aviation Summit 2019 in **Mumbai, Maharashtra.**
- The Summit is a union and it will address the problems faced in the aviation sector.

#### About the summit:

- Theme: **"Flying for all-especially the next 6 Billion"**.
- The two-day summit is being organised by the **Union Ministry of Civil Aviation, Airport Authority of India (AAI)** in association with the **Federation of Indian Chambers of Commerce and Industry (FICCI).**
- The **Union Ministry of Communications and Information Technology, Civil Air**

Navigation Services Organization (**CANSO**), Airports Council International (**ACI**), International Air Transport Association (**IATA**) are the partner organizations of the Summit.

- The two-day summit will host a conference, expo and will endeavour meaningful engagements via G2G, G2B, B2B meetings and other networking opportunities.

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- The platform will bring together prominent leaders from across the world to share their experiences on strengthening national aviation ecosystems.
- The event will also examine the future of drones, sustainable growth of aviation, cargo and logistics in the aviation industry – all the factors behind building great aviation business.

# News in-depth

## General Studies-2

### Afghanistan -A New Talking Point

#### Introduction

- Afghanistan is experiencing political, social and security instability, with extremists taking advantage of the turmoil in the country.
- On January 1, 2015, NATO announced its new mission in the country, called Resolute Support, to train and assist the Afghan security forces.
- Despite Washington's efforts, the Asian state is still being hit by multiple attacks against its civilians and military targets.

#### US Afghanistan Strategy 2017

- The core goal of the U.S. must be to disrupt, dismantle, and defeat al-Qaeda and its safe havens in Pakistan, and to prevent their return to Pakistan or Afghanistan.
- It is called South Asia policy.
- It asked Pakistan to not involve with Taliban in Afghanistan.
- It also described India as "Afghanistan's most reliable regional partner".
- The goal of new strategy is to put an end to the war in Afghanistan. Any solution to the Afghan problem must be regional.
- After a year, state of affairs has not changed as Taliban holds ground strongly in Afghanistan

#### Problems

- In 2004, Afghanistan adopted US style strong Presidential system but institutions of legislature, judiciary and civil societies for check and balance are missing
- Parliamentary election result held in October 2018 has still not been announced on reason of election fraud and Presidential election has been postponed to July 2019.
- The Iraq invasion in 2003 rapidly sucked in more and more U.S. resources as the focus shifted away from Afghanistan.

#### Status of Afghanistan Security forces:

- Afghanistan forces are facing high attrition with about 3,000 casualties since

2017 when they took over combat operation from US against Taliban

- Such status is mainly due to lack of effective training and equipments
- Currently, Afghanistan forces strength is more than 10% lower than sanctioned strength
- Special forces have been raised with strong capabilities but their numbers are limited and are depended on US airlift.

#### Recent Developments

- U.S. President Donald Trump has announced his decision to reduce American troop strength in Afghanistan, 14,000 at present, by half.
- The development has energised the principal stakeholders in Afghanistan to make calculated efforts to place themselves in as favourable a position as possible in an Afghanistan post-American withdrawal.
- India should also be thinking of what steps it should take to protect its interests in that situation.

#### India's Approach

- India must engage in dialogue with the Taliban. As they control more than 50% of the country and are getting stronger and bolder by the day.
- They are also engaged in direct talks with China, Russia, the Central Asian states and others.
- The Americans have also begun sustained dialogue with the Taliban.
- There is also a need for regional compact among all the neighboring countries as well as relevant external powers for bringing in peace in Afghanistan.
- India will need to talk to China about cooperating in Afghanistan; Chinese President and Indian Prime Minister already agreed in Wuhan, in April 2018, on working on joint projects there.
- Pakistan is highly suspicious of India's role in Afghanistan. A multilateral pact, with India subscribing to it will put to rest, at

least to some extent, Pakistan's apprehensions.

- The Bonn Agreement of 2001, which made Hamid Karzai the interim chief of Afghan government, contains a request to the United Nations and the international community to 'guarantee' non-interference in the internal affairs of Afghanistan, a request not acted upon so far.
- India advocate any peace negotiation should be afghan-led, afghan-owned and afghan-controlled.
- India has earned strong goodwill among all Afghanistan ethnic groups mainly due to creation of social infrastructure projects including assistance for parliamentary building.

### Concerns about Afghanistan

- Russia has reason to worry about a lack of stability in Afghanistan because of its concerns regarding a spread of radicalism as well as the drug menace.
- China has concerns, about the situation in its western-most region.
- The U.S. might have concerns about China entrenching itself in strategically important Afghanistan.

### Balancing India and Pakistan

- After the U.S. government formally, requested Pakistan's assistance to bring the Taliban to the table, Islamabad helped facilitate meetings between senior Taliban representatives and U.S. officials in Abu Dhabi.
- The U.S. government appears to be acknowledging that Pakistan, given its influence over the Taliban, is an important and potentially helpful player in the peace process in Afghanistan.
- It also described India as "Afghanistan's most reliable regional partner".
- With India and Pakistan not involving in SAARC negotiations, it could be difficult for them to come together in Afghanistan issue.
- India must improve its coordination with Pakistan to work together and bring peace and stability in Afghanistan.

### Ways to Solution

- The Afghans themselves must declare that they would follow strict neutrality in their relations with external powers.
- The outside powers must commit themselves to respect Afghanistan's neutrality.

- The external powers must form a multilateral declaration not to interfere in the internal affairs of Afghanistan.
- Further, the idea that the agreement on the Neutrality of Laos, concluded in 1962, could provide a model for the neutralisation of Afghanistan.
- India need strong and active diplomacy engagement with Afghanistan both officially and non-officially and should be strong partner in any peace negotiations and in developmental process.

## Decoding the Rafale controversy

### What is Rafale aircraft?

- Rafales are twin-engine Medium Multi-Role Combat Aircraft (MMRCA) manufactured by Dassault Aviation, a French firm. They are capable to perform a wide-range of combat roles such as aerial reconnaissance, ground support, in-depth strike, anti-ship strike and nuclear deterrence.

### About the deal

- Indian Air Force sought additional fighter jets in 2001 to revamp its aging fleet. The process began in 2007 when the Defence Acquisition Council approved the Request For Proposal to buy 126 aircraft, with 18 to be delivered in flyaway condition and 108 to be assembled by Hindustan Aeronautics Limited (HAL) under transfer of technology.
- Rafale was selected through a bidding process and negotiations commenced with Dassault in 2012.
- However, the Prime Minister Narendra Modi, during his official visit to France in 2015, announced that India would buy 36 Rafale aircraft in flyaway condition in a government-to-government deal, thereby scrapping ongoing negotiations with Dassault for 126 aircraft.

### What are the controversies?

- Opaque decision-making process: Unlike the previous deal, in which 18 aircraft were to come directly from France while 108 had to be built in India, this agreement would see all 36 imported into India. The Government has not provided any valid reason why it cancelled the negotiations for 126 aircraft.
- The decision for 36 aircraft was only formalised by the Defence Acquisition Council and the Cabinet Committee on Security after the visit of the PM.

- Pricing: According to the agreement signed in 2016, India will pay Rs 58,000 crore for 36 Rafale jets. However, the government is refusing to reveal complete details about the price that it has negotiated, citing the 2008 Agreement with France regarding Exchange and Reciprocal Protection of Classified or Protected Information.
- The government is reluctant to reveal details even after the French President Emmanuel Macron said that the French government has no objection to the Indian government sharing pricing details with Parliament.
- Offset clause: The deal includes an offset clause- which mandates Dassault to invest 50% of the contract value (₹30,000 crore) in Indian entities. The major portion of the offset share was allocated to Dassault Reliance Aerospace Ltd, DRAL (a joint venture between Reliance Aerostructure Ltd and the Dassault Group).

### Price Mechanism

- The Hindu has released an investigative report on rafale deal.
- In 2007, when the then UPA government created a tender for 126 Rafale aircraft, the report says the cost of each jet in flyaway (produced in France) condition was quoted at €79.3 million, which went up to €100.85 million by 2011, due to escalation cost factor.
- However, in 2016, the NDA government obtained a 9 percent discount for the 36 Rafale jets it was buying from France through an Inter-Governmental Agreement, which brought the price per aircraft down to €91.75 million.
- However, the government was now procuring 36 aircraft and not 126. So the 'design and development cost' shot up from €11.11 million per aircraft in 2007 to €36.11 million when the deal got finalised in 2016.
- The 13 India Specific Enhancements have been asked for by the Indian Air Force right since 2007 as part of its urgent strategic requirement.
- The report lists some of the ISEs as capabilities relating to radar enhancements "which will provide the force with better long-range capability", a helmet mounted display "through which IAF pilots will be able to counter many threats simultaneously", the capability to

Officers IAS Academy, Chennai start and operate from high-altitude airfields, an advanced infrared search-and-track sensor, "a very potent electronic jammer pod".

- In the 2007 bid by M/s Dassault Aviation, the 'design and development' cost of €1.4 billion claimed by the vendor for the India Specific Enhancements was to be spread over 126 aircraft.
- Although this fixed cost was negotiated down to €1.3 billion in the 2016 intergovernmental deal, it was distributed over 36 jets. This straightaway meant an increase of €25 million in the price of each aircraft as compared with the UPA era bid by Dassault.

### Procedure Bypassed

- The Hindu's report claims that it has access to documents which show that three members in the 7-member Indian Negotiating Team (INT) objected to the high cost, but the deal went through with a 4:3 majority.
- It also suggests that as many as 10 contentious issues were resolved by a 4:3 majority in the INT.
- The report points at another aspect which suggests that Eurofighter Typhoon Consortium had presented the government with an offer which it could have used to effect price reduction in the Rafale deal.
- The consortium which comprises of leading aerospace and defence companies from the United Kingdom, Germany, Italy, and Spain had also been in the fray with Rafale for the deal, between 2009 and 2011.
- As the Rafale deal got stuck, Eurofighter sensed a chance and offered a new deal to the NDA government with a 20 percent discount.
- This offer was also declined through a 4:3 majority in the INT which said that Eurofighter's offer was not in line with the provisions of the Defence Procurement Procedure and was also against Central Vigilance Commission (CVC) guidelines.
- The Defence Acquisition council which has the power has shed away its powers to Cabinet Committee on Security, headed by Prime Minister.

### Defence Acquisition Council

- Defence Acquisition Council (DAC), under the Defence Minister was constituted for

overall guidance of the defence procurement planning process.

- It is headed by Defence Minister.
- The functions of the DAC include
  - In-principle approval of 15 Year Long-Term Integrated Perspective Plan for Defence Forces.
  - Decision on acquisition proposals.
  - Categorization of the acquisition proposals relating to 'Buy', 'Buy & Make' and 'Make'.
  - Decisions regarding Transfer of Technology under 'Buy & Make' category of acquisition proposals; and
  - Field Trial evaluation.

### Supreme Court on Deal

- Supreme Court has given clean chit for purchase of 36 Rafale fighter Jets.
- The three Judge bench headed by Ranjan Gogoi, find nothing wrong on the purchase of 36 fighter jet instead of 126 from France.
- The court gave clean chit on three aspects – Purchasing of 36 Rafale jets instead of 126. Pricing of Rafale jets and Selection of Indian offset partners.
- The apex court rule has two main points
  - (1) It finds no evidence of commercial favoritism
  - (2) It is not the job of court to deal with comparative pricing mechanism.

## Assam Accord

### Why in news?

- M.P. Bezbaruah Head of Centre's panel on Assam Accord quits, on the controversy over implementation of Assam Accord following the new Citizenship amendment bill.

### About Assam Accord

- The Assam Accord is a tri-partite agreement signed in 1985 between the Centre, the State government and All Assam Students Union to the end the 6 years agitation demanding identification and deportation of illegal immigrants.
- As per the Assam Accord, all people who came to Assam prior to January 1, 1966, would be given citizenship. Those who moved in between January 1, 1966, and March 24, 1971, would be "detected in accordance with the provisions of the Foreigners Act, 1946 and the Foreigners (Tribunals) Order 1964". Their names would be deleted from the electoral rolls

Officers IAS Academy, Chennai and they would remain disenfranchised for a period of 10 years.

- **Foreigners who came to Assam on or after March 25, 1971, shall continue to be detected, deleted and practical steps shall be taken to expel such foreigners.**
- The signing of the accord ensured that the agitation came to an end. However, several clauses mentioned in it are yet to be implemented, and that in turn has kept the issue burning along ethnic, religious and geographical lines for the last three decades.

### About Clause 6 in Assam Accord

- Part of the Assam Accord that came at the culmination of a movement against immigration from Bangladesh, Clause 6 reads: "Constitutional, legislative and administrative safeguards, as may be appropriate, shall be provided to protect, preserve and promote the cultural, social, linguistic identity and heritage of the **Assamese people.**"
- **The Assam Accord considers March 25,1971 as the cut-off date to grant Indian citizenship to immigrants whereas most stakeholders wants NRC of 1951** should be taken as the cutoff for defining "Assamese people" eligible for the proposed safeguards under clause 6.
- Should 1951 be accepted as the cutoff, it would imply that those who migrated between 1951 and 1971 would be Indian citizens, but would not be eligible for safeguards meant for "Assamese people" under clause 6.

### What are the safeguards under Clause 6:

- The proposed committee created by Centre would seek to define what are the safeguards under Clause 6.
- Some stakeholders consider "safeguards" as reservation of electoral seats, and land and political rights, whereas other section of stakeholder's demand safeguards should also include rights over natural resources and protection of culture of the indigenous people.
- Some even demand Legislation should be enacted to ensure that mere citizenship is not enough and you need to be a citizen in or prior to 1951 to purchase land. Similar laws should be put in place for jobs.

### What will the proposed committee by centre do?

- In a statement, the Home Ministry said the committee would examine the effectiveness of actions since 1985 to implement Clause 6.
- It would hold discussions with all stakeholders and assess the quantum of reservation of seats in the Assembly and local bodies for Assamese people.
- It will also assess the steps required to protect Assamese and other indigenous languages of Assam, reservation in state government jobs, and other measures.

#### **Explained: Citizenship (Amendment) bill vs NRC vs Assam Accord**

- The citizenship amendment bill seeks to facilitate acquisition of citizenship by six identified minority communities namely Hindus, Sikhs, Jains, Buddhists, Christians and Parsis from Afghanistan, Pakistan and Bangladesh who came to India before December 31, 2014.
- The beneficiaries of Citizenship Amendment Bill can reside in any state of the country and the burden of those persecuted migrants will be shared by the whole country.
- The Assam Accord mandated that those who settled in the state after the cut-off date of March 24, 1971 would be weeded out and stripped of citizenship rights

#### **Bone of contention**

- Since the Citizenship Amendment Bill has the potential to grant citizenship status to Bangladeshi Hindus under Citizenship Amendment Bill, 2014, the general sentiment in Assam with respect to the bill has been that it will defeat the purpose of the Assam Accord and National Register of Citizens.

### **Collegium controversy**

#### **Why it is in news?**

- The Collegium system was in news in earlier times for being a non-transparent body of judges appointing themselves.
- Now it is in news after the Collegium 's unusual action of **revisiting decisions made at an earlier meeting and arbitrarily revoking a decision made at an earlier meeting.**
- The rationale given by the Collegium for revoking earlier decision was **“the required consultations could not be undertaken and completed in view of**

**winter vacation ” and “some additional material has surfaced “.**

#### **About Collegium System:**

- The Supreme Court of India's collegium system, which appoints judges to the nation's constitutional courts, has its genesis in, and continued basis resting on, three of its own judgments which are collectively known as the Three Judges Cases
- Following are the three cases:
- S. P. Gupta v. Union of India - 1981 (also known as the Judges' Transfer case or First Judges case)
- Supreme Court Advocates-on Record Association vs Union of India - 1993(Second Judges case)
- In reply to Special Reference 1 of 1998 made by President of India to Supreme court(Third Judges case)
- Over the course of the three cases, the court evolved the principle of judicial independence to mean that no other branch of the state - including the legislature and the executive - would have any say in the appointment of judges.
- The court then created the collegium system consists of Chief Justice of India and four senior most judges of Supreme Court to decide on appointment and transfer of Judges, which has been in use since the judgment in the was issued in 1993. There is no mention of the collegium either in the original Constitution of India or in successive amendments.
- The Third Judges Case of 1998 is not a case but an opinion delivered by the Supreme Court of India responding to a question of law regarding the collegium system, raised by then President of India K. R. Narayanan, in July 1998 under his constitutional powers.

#### **Problems with Collegium system in place:**

1. The collegium system is considered to be **undemocratic in nature** as the main decision makers in case of appointment and transfer of judges are judges themselves who are not accountable to masses and can't be regarded as proper and responsible decision makers
2. The collegium system **failed to keep pace in filling vacancies due to caste, political and other communal reasons**
3. In The collegium system , **merit of Judges** cannot be ascertained just on the basis of

seniority, and there is no mechanism in place to evaluate the professional calibre of the judges

4. **Non transparent and Non Accountable** in functioning of the collegium
5. **Arbitrary revisiting and revoking of decisions** earlier made by the collegium is a recent problem emerging from the collegium system

#### Way Forward:

- Even though alternatives like National Judicial Appointment Commission are suggested to replace the Collegium System, it comes with its own set of loopholes, diluting the principle of independence of Judiciary which is a paramount value in a democracy for effective justice system for people to be present.
- The collegium system is the best when it comes to upholding “The principle of Independence of Judiciary”
- The most efficient option to do away with all the problems of the collegium system and NJAC could be a full time consulting body, independent of both Government and Judiciary, constituted to select judges. The body could work in a transparent way by publicly laying down a scientific mechanism of selection and duly advertising vacancies and evaluating candidates based on criteria laid down. This was suggested by advocate Prashanth Bhushan and Centre for Public Interest Litigation against the NJAC Act.

### The problem of hasty passage of Bills in Parliament

#### Why it was in news?

- The constitution(124th Amendment ) Bill was passed in Lok Sabha and Rajya Sabha in a hasty manner without being introduced in accordance with the rules of procedure of Lok Sabha and Rajya Sabha and passed without referring to Parliamentary Standing Committee
- The rules of procedure of the Lok Sabha and Rajya Sabha require every Bill to be circulated atleast two days ahead of introduction.
- This is to give time for MPs to read the Bill and discuss it (or make objections) when the vote on the motion to introduce the Bill is taken up.

- The usual practice is to refer important Bills to the respective standing committee of Parliament.
- This step allows MPs to solicit public feedback and interact with experts before forming their recommendations.
- But the Constitution (124th Amendment ) Bill, 2019 that enables 10% reservation in education and employment for economically weaker sections was introduced in the morning and taken up for discussion in the evening of same day.
- Members of Parliament had only very less time to read and understand the intricacies present in the bill leading to a poor discussion and lack of proper scrutiny.
- The Bill also bypassed the usual practice of referring to Parliamentary Standing Committee which Members of Parliament use a measure to solicit public feedback and interact with experts before forming their recommendations.
- Let us summarise the number of ways in which due oversight was skipped. The Bill was not circulated ahead of being introduced
- There was hardly any time between its introduction and final discussion 3. it was not examined by a committee. Barring a few small parties, none of the larger Opposition parties asked for the Bill to be carefully considered by a parliamentary committee — even in the Rajya Sabha where they might have been able to muster the numbers to ensure this.

#### The Comparison of functioning of Indian Parliament with British Parliament:

- To compare the functioning of Indian Parliament with British Parliament,
- The British Parliament on the same day(Wednesday), The Speaker ensured parliamentary supremacy over the government. A member of the ruling Conservative Party wanted to move an amendment to set a deadline for the Prime Minister to put forward new plans if she loses the Brexit vote next week. When the government objected that such amendments to set the business of the government in the House can be moved only by a Minister, the Speaker differed. He said that every member had a right to move an amendment. The motion was won by 308 votes to 297.

## SC records how the bar girls took on the Maharashtra govt

### Background:

- The Supreme Court lifted ban on Dance Bars in Maharashtra in 2014
- Maharashtra Assembly passed Maharashtra Prohibition of Obscene Dances in Hotels, Restaurants and Bar Rooms and Protection of Dignity of Women Act, 2016 imposing harsh regulations on dance bars to be run in Maharashtra making it difficult for dance bars to be in business.
- This move lead to loss of livelihood of substantial section of women from under-privileged socio-economic background.
- By one estimate, the strict regulations put more than 75,000 dancers out of work, reportedly driving a large percentage of them to prostitution.
- Maharashtra's crackdown on dance bars has damaged hotel businesses and thrown the lives of thousands of women into uncertainty.
- As the Supreme Court observed , no licences have been given for new dance bars since 2005, when the ban was enforced.

### Recent update:

- The Supreme Court recently, diluted a tough Maharashtra government law that effectively prevented the reopening of dance bars shut since 2005, making it easier for owners to operate and patrons to visit them.
- A bench headed by Justice A. K. Sikri upheld the Maharashtra Prohibition of Obscene Dance in Hotels, Restaurants and Bar Rooms and Protection of Dignity of Women (working therein) Act, 2016 but scrapped or diluted many of its provisions.
- The court removed the requirement of a partition between the dancing area and the bar/restaurant area and the ban on serving alcohol in the dance area.
- The requirement of applicants to have "good character" with no history of criminal record was also struck down.
- The SC order allows tips for dancers, but prohibits showering money on them. Dance bars can operate between 6pm and 11.30pm.
- The court also struck down the rule requiring them to install CCTV

- This case highlights three important ways in which the British Parliament works better than ours.
- First, the absence of an anti-defection law, so that each MP can vote her conscience. Note that the motion that put the government in a spot was moved by a former attorney general and a member of the ruling party.
- Second, it is known exactly how each MP voted. In India, most votes (other than Constitution Amendments that need a two-thirds majority to pass) are through voice votes — just 7% of other Bills had a recorded vote over the last 10 years.
- Third, the Speaker insisted on the supremacy of Parliament, and allowed a motion against the wishes of the government. Unlike in India, the independence of the Speaker is secured in the U.K. as no party contests against the Speaker in the next general election.

### Falling short

- Our Parliament falls short in functioning when compared with British Parliament due to some structural reasons. These include
- the anti-defection law (that restrains MPs from voting according to their conscience),
- lack of recorded voting as a norm (which reduces the accountability of the MP as voters don't know which way they voted on each issue),
- party affiliation of the Speaker (making her dependent on the party leadership for re-election prospects),
- frequent bypassing of committees (just 25% of Bills have been referred to committees in this Lok Sabha),
- insufficient time and research support to examine Bills, and the lack of a calendar (Parliament is held at the convenience of the government).

### Way Forward:

- Parliament has a central role to **secure the interest of citizens**. It is the primary **body of accountability that translates the wishes and aspirations of citizens into appropriate laws and policies**.
- We need to address each of these issues to strengthen Parliament and protect our democracy.

judgement that the State had no right to thrust its notion of morality on society.

cameras inside, on the grounds that it violates privacy.

- The court mandated written contract with employees, deposit of the remuneration in their bank accounts, and submission of the contract with the licensing authority.
- The employment need not be monthly, and could be based per performance.
- The court also struck down a condition by which dance bars could not be within 1km of an educational institution or a religious place citing the reason that “then no place in Mumbai licence would be granted” asking Maharashtra government to prescribe reasonable distance from educational and religious institutions.

### View of Dance Bar Girls Union on the Verdict:

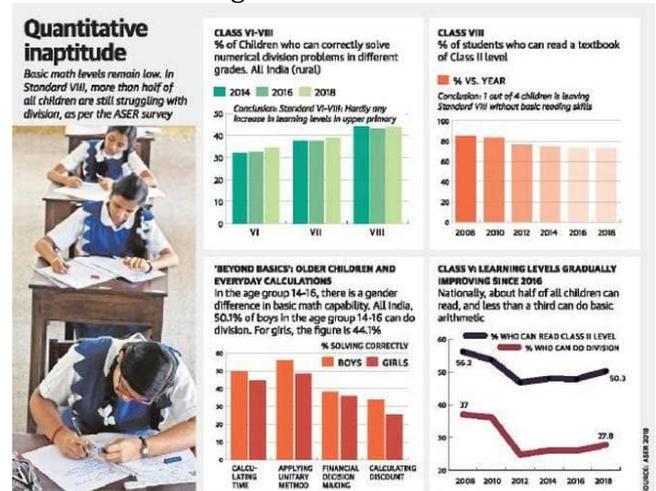
- The Dance Bar Girls Association welcomed the verdict, adding the SC had upheld the contractual agreement which was its long-standing demand. “It is a good judgement that would hopefully bring about the much-needed regulation in the industry. We have always fought against exploitation of dancers but banning the activity was never the solution.
- We now hope this ruling will help bar owners get licences and the dancers would get employment in a much-regulated environment,” association president Varsha Kale said.

### View of Maharashtra State Government on the Verdict:

- Maharashtra home minister Ranjeet Patil said the ruling was a “mixed verdict which does not reflect the public sentiment in Maharashtra which was against dance bars”.
- The government would give a detailed reaction after studying the verdict and also decide the future course of action, Patil said.
- He said the ruling upheld some of the conditions imposed by the government. “The SC has upheld the state government’s condition that there would be no obscenity in the dance bars and that there would a contractual agreement between the bar dancers and owners.
- Also, the honourable SC has accepted the condition that dance bars must operate between 6pm and 11.30pm,” he said.
- However, the Bench of Justices A.K. Sikri and Ashok Bhushan concluded in their

## Learning little

- The latest assessment of how children are faring in schools in rural areas indicates there has been no dramatic improvement in learning outcomes.



### Report findings:

- The Annual Status of Education Report (ASER) 2018, the results of a yearly survey that NGO Pratham has been carrying out since 2006, shows that more than half of Class VIII students cannot correctly solve a numerical division problem and more than a quarter of them cannot read a primary level text.
- Those figures are worse than they were a decade ago. In 2008, 84.8% of Class VIII students could read a text meant for Class II; by 2014, only 74.6% could do so, and by 2018, that percentage had fallen further to 72.8%.
- Four years ago, 44.1% of students in Class VIII could correctly divide a three digit number by a single digit number; in 2018, that figure had fallen slightly to 43.9%.
- This shows a decline trend in quality of education in rural areas
- Pratham researchers concluded that “without strong foundational skills, it is difficult for children to cope with what is expected of them in the upper primary grades.
- Except for a small section at the top of the class, the majority of students have obviously been let down.
- It should put administrators on alert that while 53.1% of students in Class 5 in rural government schools could in 2008 read a

text meant for Class 2, the corresponding figure for 2018 stood at 44.2%; for comparison, private schools scored 67.9% and 65.1% for the same test in those years.

- The report also says the overall percentages camouflage wide differences in skill level between States, or even between students in a single classroom.
- For example, Pratham found that almost half of Class III students in government schools in Himachal Pradesh can read a Class II level text, while another quarter can read a Class I level text. This allows the teacher to use grade level textbooks for most of the class, although the rest will need ongoing support for basic skills.
- In government schools in Uttar Pradesh, however, a quarter of students cannot recognise letters yet, while another 37% can recognise letters, but not read words. Urgent and immediate help is needed if these students are not to be left behind.

**Other findings of the report:**

- It found that enrolment is increasing and the percentage of children under 14 who are out of school is less than 4%.
- The gender gap is also shrinking, even within the older cohort of 15-and-16-year-olds. Only 13.6% of girls of that age are out of school, the first time that the figure has dropped below the 15% mark.

**Why it is in News?**

- Ngo Pratham releases Annual Status of Education Report every year. It recently released its report for the year 2018 and found stagnant levels of education outcomes in rural India.

government's failure to effectively target subsidies towards the poor.

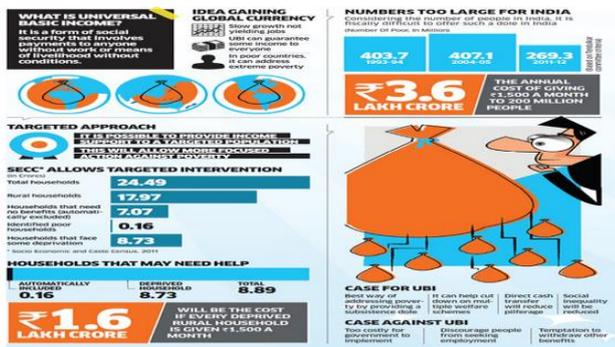
**Universal Basic Income**

- Basic income refers to a minimum income which can provide for basic necessities sufficiently for all. A basic income is a regular, periodic cash payment delivered unconditionally to all citizens on an individual basis, without requirement of work or willingness to work.
- It should be given to all irrespective of their employment status. Additionally, even post education if a person is not employed, he / she should be given the basic income.
- Sikkim is set to become the first state in India to roll out Universal Basic Income (UBI), an idea that is, like many rights, both unconditional and universal, one that requires that every person should have a right to a basic income to cover their needs, just by virtue of being citizens. The five broad features of such schemes are:
  - Payments at periodic regular intervals (not one-off grants),
  - Payments in cash (not food vouchers or service coupons),
  - Payments to individuals,
  - Universality, and
  - A sustainable and basic amount as Universal Basic Income

**Is UBI is better than Regular Farm Loan Waivers**

- The promises made with the opposition parties in centre and states of farm loan waivers. No doubt this policy would lessen the burden on a hard-pressed social group, and lessen rural poverty, but it is a populist measure.
- It will be popular, but will not alter structures and is bad economics.
- Suppose the principle were generalised. If one type of loan could be declared non-repayable, why not others?
- Unless one can show that a debt is odious or illegal per se, it would be a dangerous precedent to declare that one type of debt and not others need not be repaid.
- In the long term, financial institutions would be less likely to extend loans to small-scale farmers.
- If the loans were made on fair rules, it would be better to enable the debtors to pay them back less onerously.

**Basic income works and works well**



- The idea of a universal basic income has gained currency in the West because of the threat of automation-induced job losses.
- In India, the idea first gained currency as a solution to chronic poverty and

- That is why a basic income would be a more equitable and economically rational way of addressing what is undoubtedly an unfolding rural tragedy.
- The idea of an income support scheme for farmers draws from the Rythu Bandhu scheme initiated by the Telangana government which may have helped the government storm back to power.
- Unlike farm loan waivers or minimum support prices for specific crops, a Rythu Bandhu-type income support scheme does not damage credit culture or distort markets.
- However, the Rythu Bandhu scheme excludes tenant croppers who consist of around 13.7% of farm holdings all across India.

#### Benefits from Basic Income Provision:

Studies and surveys on the **basis of trials and pilot studies** have reported various benefits of providing basic income to people which are as follows:

- The nutrition intake of those suffering from poverty rose. Data provides that consumption of pulses, fresh vegetables and meat was up by huge number of 1,000%, 888% and 600% respectively.
- People were also able to spend more on healthcare and as a result, incidence of illness dropped.
- Among other social indicators education also witnessed progress in terms of enrolment and attendance, especially among female students.
- Basic income lived up to its rationale of reducing the gap between rich and poor and led to more equitable development.
- People living in villages worked harder than before and also took up multiple economic activities with the help of the basic income.
- With this confirmed source of income, indebtedness of people decreased and the capacity to save increased, hence placing them in a better financial position.
- Basic income acts as a kind of a social security for the weak, unwell or physically challenged.
- Also for people who are skilled and have employment but are not able to receive quality wages due to lack of opportunities or other reasons, basic minimum income

Officers IAS Academy, Chennai acts as a supplement to the existing economic resources.

#### Way Forward:

- Along with the National Food Security Act, MGNREGA, a plan for provision of basic income can be a game changer for the country.
- The Government of India has also decided to dedicate a special chapter to basic income as a tool for poverty reduction in the Economic Survey.
- The beauty of moving towards a modest basic income would be that all groups would gain.
- That would not preclude special additional support for those with special needs, nor be any threat to a progressive welfare state in the long-term.
- UBI envisages an uncompromised social safety net that seeks to assure a dignified life for everyone, a concept that is expected to gain traction in a global economy buffeted by uncertainties on account of globalisation, technological change, and automation.
- It would merely be an anchor of a 21st century income distribution system.

#### Sedition, once more

- Sedition Charges under section 124A of Indian Penal Code invoked against Assamese scholars for remarks made against the proposed citizenship law.
- Section 124A – of Indian Penal Code whoever, by words, either spoken or written, or by signs, or by visible representation, or otherwise, brings or attempts to bring into hatred or contempt, or excites or attempts to excite disaffection towards, the Government, shall be punished by imprisonment or fine.
- The expression “disaffection” includes disloyalty and all feelings of enmity. Comments expressing disapprobation of the measures of the Government with a view to obtain their alteration by lawful means, without exciting or attempting to excite hatred, contempt or disaffection, do not constitute an offense under this.
- Other sections of IPC:
  - Section 121 – Wage war against the government of India
  - Section 123 – Concealing a design to facilitate such a war

#### Background about Section 124A

- Drafted by Thomas Macaulay, it was introduced in the 1870s, originally to deal with “increasing Wahabi activities between 1863 and 1870 that posed a challenge to the colonial government”.
- In the 19th and early 20th Centuries, the law was mainly used against Indian political leaders seeking independence from British rule.
- Mahatma Gandhi, who was charged with sedition, famously said the law was “designed to suppress the liberty of the citizen”.
- In 1962, the Supreme Court imposed limits on the use of the law, making incitement to violence a necessary condition.

#### **Why section 124A of IPC is in debate:**

- It is very often under criticism because Centre and the States have invoked the section against activists, detractors, writers and even cartoonist seeking to silence political dissent by accusing dissenters of promoting disaffection.
- For instance, it has been invoked against several public personalities, particularly those critical of the government such as youth leader Kanhaiya Kumar and against Assamese scholar relates to speeches suggesting the demand for independence and sovereignty if the Citizenship (Amendment) Bill was pushed through Parliament.
- According to the National Crime Records Bureau, 35 cases of sedition were reported in 2016. Many of these cases did not involve violence or incitement to violence.

#### **Why sedition act should be abolished**

- A foremost objection is a strong criticism against government policies and personalities, slogans and stinging depictions of an unresponsive or insensitive regime are all likely to be treated as ‘seditious’.
- It is Introduced by the British to suppress the freedom struggle and its existence at present is not justified. Britain itself abolished it 10 years ago, then why India still have the section alive.
- India ratified the International Covenant on Civil and Political Rights (ICCPR) and misuse of sedition law under Section 124A and the arbitrary slapping of charges are inconsistent with the ICCPR.
- Section 124A has been invoked against activists, detractors, writers and even

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cartoonists on several occasion to suppress their freedom of speech and expression (Chilling effects on Article 19 (1))

- Another lacuna, as pointed by the Law Commission of India, is that the definition of sedition does not take into consideration disaffection towards (a) the Constitution, (b) the legislatures, and (c) administration of justice, all of which would be as disastrous to the security of the State.

#### **Why continuation of Section 124A is needed.**

- The main reason behind the continuation of Sedition act after independence was to prevent the misuse of free speech (reasonable restriction) that would be aimed at inciting hatred and violence.
- Due to Maoist insurgency and rebel groups virtually run a parallel administration, it would be perilous to abolish it. These groups openly advocate the overthrow of the state government by revolution.

#### **Law Commission observation:**

- In an earlier report in 1968, the Law Commission had rejected the idea of repealing the section.
- Later on, the Commission noted in a number of cases that skepticism has been expressed by the judiciary about the potential misuse of the sedition law. It was also observed that sedition is many a time used to stem any sort of political dissent in the country.
- It has opined the burning of Constitution, or expression of disappointment with members of Parliament through a visually disparaging cartoon cannot amount to sedition.
- The Commission opined that “Section 124A should be invoked only in cases where the intention behind any act is to disrupt public order or to overthrow the Government with violence and illegal means
- The Law Commission of India in its 42nd report, published in 1971, the section to include disaffection towards the Constitution of India, Parliament and state legislatures and the administration of justice.

#### **Supreme Court judgment timeline on the Validity of Section 124-A**

- In Ram Nandan Vs State (1958) – The Allahabad High Court found Section 124(A) unconstitutional.
- In Kedar Nath Singh v. the State of Bihar (1962) – The Supreme Court held that the

law is valid but cannot be used to stifle free speech and upheld the constitutionality of Section 124A and said it is only applicable where there is violence or incitement to violence in the alleged act of sedition.

- Recently, in 2016 – The apex court held that criticism of government does not constitute sedition without incitement to violence.

### Applicability of Sedition Charges

**Sedition charges can be invoked in cases such as:**

- **In the Kedar Nath Singh case**, a five-judge Bench of the Supreme Court stated that allegedly seditious speech and expression may be punished only if the speech is an **'incitement' to 'violence', or 'public disorder**
- **In the Indra dasVs State of Assam case**, the Supreme Court stated that only speech that amounts to **"incitement to imminent lawless action"** can be criminalised
- Shouting out words leading up to incitement of violence and take up arms will attract sedition charges.
- Exciting or attempting to excite disaffection against the Government of India;
- Such act or attempt may be done (a) by words, either spoken or written, or (b) by signs, or (c) by visible representation; and
- **The act must be intentional.**

**Sedition charges cannot be invoked in cases such as:**

- Comments expressing disapprobation of government measures with a view to obtaining their alteration do not constitute

an offense, as long as there is no incitement to violence or disaffection.

- **In the Balwant Singh vs State Punjab case**, the Supreme Court set aside the convictions for 'sedition and 'promoting enmity between different groups on grounds of religion, race etc.
- Mere demands that go against the legal or constitutional scheme of things.
- Mere expression of critical views for accusing someone of planning to wage war or promote disaffection against the government.

### Way Forward

- Every irresponsible exercise of the right to free speech and expression cannot be termed seditious. For merely expressing a thought that is not in consonance with the policy of the government of the day, a person should not be charged under the section.
- While it is essential to protect national integrity, it should not be misused as a tool to curb free speech. Dissent and criticism are essential ingredients of a robust public debate on policy issues as part of a vibrant democracy.
- Therefore, every restriction on free speech and expression must be carefully scrutinized to avoid unwarranted restrictions.
- Section 124A should be invoked only in cases where the intention behind any act is to disrupt public order or to overthrow the Government with violence and illegal means

## General Studies 3

### Where the rich got their way

#### Introduction:

- The 24th Conference of the Parties (COP-24) of the UN Framework Convention on Climate Change (UNFCCC), held at Katowice in Poland, brings little cheer on the climate front for developing countries.
- With the passage of the “rulebook” for the implementation of the Paris Agreement, the developed countries have largely succeeded in establishing a global climate regime that gives them the strategic advantage and assuages some of their core concerns.
- This signals the making of a new, contradictory situation where the scope and complexity of the regime are fundamentally at odds with the very purpose for which the regime has been constructed.

#### Background:

- At the heart of this strategic success is the substantial rollback of differentiation between the global North and South in climate action.
- The first step of this process began with the Paris Agreement, when the developed nations were allowed to make voluntary commitments to climate mitigation, on par with the developing nations, without any benchmark to ensure the relative adequacy of their commitment.

#### Rulebook:

- At Katowice the process went further, **with uniform standards of reporting, monitoring and evaluation for all countries.**
- These reporting requirements, while superficially impressive, appear in their true light when we realize that in their uniformity they are intended as much for Maldives as the U.S.
- The real targets of this uniformity are not the poorest nations, who have been provided exemptions, but the larger developing nations.
- While all developing nations are ostensibly allowed flexibility in these reporting requirements, the concession has been hedged in with a number of conditions, with the intention of forcing them to full compliance in short order.

- The reporting requirements are also marked by a pseudo-scientific concern for stringency, which is far in excess of the accuracy of climate science itself.
- Indeed, the recent Special Report of the Intergovernmental Panel on Climate Change (IPCC) on global warming at 1.5°C estimates substantial uncertainties in the quantum of cumulative global emissions that are still allowed before the global carbon budget of the world is exhausted.
- In the face of such uncertainty, the requirement of reporting as little as 500 kilo tonnes or 0.05% of national emissions per country has little scientific significance.
- More pernicious is the uniformity of the stringency in reporting being expressed in percentage terms.
- Elementary mathematics informs us that a smaller percentage of the emissions of a large emitter will be a larger quantity in absolute terms compared to the larger percentage of emissions of a small emitter.

#### Concerns:

- The problem is the contradiction between the onerous nature of these universal rules and the total lack of initiative by the developed countries in taking the lead in climate mitigation.
- All developed countries continue to invest in fossil fuels either through direct production or imports.
- Some do so because of the downgrading of nuclear energy due to domestic political pressures. Others are still trying to wean themselves off coal by shifting to gas.
- Overall, as the International Energy Agency reports, the use of fossil fuel-based electricity generation continues to rise for OECD countries.

#### IPCC's special report:

- In the event, the dispute that broke out at COP24 over whether the Special Report of the IPCC should be welcomed or merely noted must be considered a red herring.
- Despite the vociferous pleas of the Least Developed Countries and the Small Island Developing States for the former choice, in the absence of adequate action, such symbolic gestures are clearly of little value.
- Indeed, the report itself appears to have been used to generate a sense of urgency in

stamping countries into approval of the “rulebook” rather than point the way to more substantial mitigation by the developed nations.

- The Special Report, for instance, did little to inspire the developed countries to increase the quantum of climate finance as well as speeding up its delivery.

#### Climate finance a debatable issue:

- It has been the long-standing argument of the developing world that the bulk of climate finance must be from public sources.
- In contrast, the developed countries have succeeded in putting other sources of finance, including FDI and equity flows, on par in the accounting of the flow of climate assistance that developing countries need.
- As the “rulebook” stands today, private sector flows or loans, which will increase the indebtedness of developing countries, are to be considered adequate fulfilment of developed country obligations under the UNFCCC.
- Much of the pressure exerted by developed countries at COP24 had the active backing and instigation of the U.S.
- Despite the public posturing by other G-8 heads of state outside the climate summits, the marked synergy between the U.S. and its political and strategic allies in pushing through several critical elements of the “rulebook” was no secret.

#### India’s negotiations with COP24:

- India, despite its articulation of the need for equity in climate action and climate justice, failed to obtain the operationalization of these notions in several aspects of the “rulebook”.
- Even though it pushed for equity, particularly in the benchmarks for the periodic review of the Paris Agreement, it failed to press home its point.
- Successive dispensations in New Delhi have fallen short of doing the needful in this regard.
- In contrast, Brazil held its ground on matters relating to carbon trading that it was concerned about and postponed finalization of the matter to next year’s summit.
- Regrettably, while India has not been shy to hold out against the global nuclear order it has not extended this attitude to protecting

its interests in the emerging global climate regime.

- It is now evident that New Delhi underestimated what was at stake at Katowice and the outcome portends a serious narrowing of India’s developmental options in the future.
- A number of environmental and climate think tanks, NGOs and movements have also done their share to disarm the government in the negotiations.
- Buying uncritically into the climate narrative of the developed nations, they have been continually urging unilateral domestic action on moral grounds, while ignoring the elementary fact that global warming is a global collective action problem.
- Despite the significant number of Indians at COP24, the broad articulation of India’s needs was at the lowest ebb seen in the last several years.

#### Conclusion:

- At the final plenary of COP24, the Like-Minded Developing Countries grouping echoed India’s reservations on the neglect of equity and climate justice in the final form of the “rulebook”, while the broader G77 plus China combine expressed its regret at the unbalanced nature of the outcome, with its undue emphasis on mitigation by all.
- But with the “rulebook” nevertheless having been adopted, COP24 signals a global climate regime that benefits and protects the interests of the global rich, while leaving the climatic fate of the world, and the developmental future of a substantial section of its population, still hanging in the balance.

## The coast is unclear

#### Introduction:

- The National Democratic Alliance government has unleashed several extremely unimaginative developmental policies that target areas that have retained some degree of ecological value to turn them into sites for industrial production.
- This is despite evidence of the damaging effects of such policies. The latest instance of this is the Coastal Regulation Zone (CRZ) notification of 2018.

#### Issue:

- The government has announced “amendments” to the CRZ law which, in the words of the fisher leader from Goa, Olencio Simoes, spell the death of the coasts.
- These changes negate the coastal space entirely of its special socio-ecological uniqueness and open up this niche space that joins land and sea to mindless real estate development, mass scale tourism, and industry.

#### Devalued fisheries economy:

- Successive governments have created the impression that India’s coastline is a vast, empty space that economic actors can take over.
- Industrialists and real estate developers share this view because coastal lands are for the most part outside the regime of individual property rights. Land grabbing by private and government actors has been the norm.
- These actors forget that this space is the common property of coastal villages, towns and cities, and public beaches.
- Over 3,000 fishing hamlets reside along India’s coast, park and repair their nets and boats and organise their economic and social activities here. The fisheries sector employs 4-9 million people.
- The self-reliant fisher communities generate Rs. 48,000-Rs. 75,000 crores for the economy, with almost no support from governments in the form of subsidies.

#### Urbanization and industrialization problem:

- With rapid urbanisation and industrialisation, coasts have become convenient dumping grounds.
- Sewage, garbage and sludge from industrial processes land up on the coastline and makes life for coastal dwellers a living hell.
- The new amendments legalize the setting up of common effluent treatment plants (CETPs), an impractical technology for cleaning up waste, on the most fragile parts of the coast.
- These projects have made the coastal people of Saurashtra and south Gujarat more vulnerable to toxicity in their food, water and air.
- Since India’s systems to reduce waste generation and comply with pollution standards are so poor, the law now makes the coasts legitimate receptacles for all waste.

#### Risking lives:

- It is untrue that this notification has been introduced after consultations with “other stakeholders”.
- The **National Fish Workers Forum (NFF)**, for instance, has vociferously opposed these amendments since the review was announced in June 2014 by the Shailesh Nayak Committee.
- It has carried out protests demanding fisher rights to the coastal commons and legal action against corporate and government violators of coastal laws.
- The indifference of the government to coastal and marine regions has even led the forum to demand a separate Fisheries Ministry.
- Instead of using the NFF’s knowledge to craft an effective policy, the government has peddled the same development model that has generated conflict and impoverishment.
- The notification now exposes more people to the unassessed impacts of climate change-related coastal damages.

#### Way forward:

- India’s coasts are already facing climate change events such as intensive, frequent and unpredictable cyclones and erosion.
- In 2017, **cyclone Ockhi** killed over 300 people on the west coast, a region not familiar with such events.
- The combined effects of harmful coastal development and climate change are apparent in the form of mass migrations from coastal areas like Odisha and the Sundarbans in West Bengal.
- These lessons have already sparked decentralized action: mangroves are being planted, sand dunes and coastal wetlands are being protected and coastal communities and local governments are collaborating on disaster preparedness.
- But the top-down policy of the Central government to encroach what’s left of the coasts and increase activities that involve dredging, sand removal, and large-scale constructions contradict grass-roots and scientific wisdom.

### Train hits killed 49 elephants in 3 years

#### Introduction:

- In response to a question in Rajya Sabha, the MoEFCC has told the Rajya Sabha that 49 elephants were killed in Railway accidents between 2016 and 2018.
- Man-made linear infrastructure such as roads, highways, power lines, railway lines, canals, pipelines (water, gas, petroleum), electric fences, and fire lines, have highly detrimental ecological impacts and pose significant threat to wildlife.
- Some prominent examples of the negative impacts include NH72 and 74 crossing Rajaji National Park, NH 67 and 212 passing through Bandipur National Park.

#### Linear Infrastructure across wildlife habitats in India:

- 72 of the documented 88 elephant corridors have national highways or other major roads passing through them and 7 have railway lines.
- Of the 50 Protected Areas (PAs), declared as tiger reserves in the country, major roads pass through 26.

#### Impact of Linear Infrastructure on Wildlife:

- **Habitat Loss:** There is direct loss of habitat during establishment and maintenance of roads, highways and railway lines due to clearance of vegetation, dumping of excavated earth and materials, movement of heavy vehicles etc.
- **Habitat Fragmentation:** Road and railway lines dissect contiguous habitat patches, resulting in smaller patches and consequent decline in biodiversity due to increased outer disturbances.
- **Degradation of Habitat quality:** wildlife habitats adjacent to rail and roads often suffers from various detrimental impacts from invasion of exotic species, pollution due to liquid solid wastes and emissions.
- **Noise Induced Psychological and Behavioural changes in animals:** Traffic noise is often attributed to cause significant psychological and behavioural issues in animals especially birds. Traffic noise directly interferes with birds' vocal communication and consequently their territorial behaviour and mating.
- **Injury and mortality:**
  1. **Road and rail induced injury and mortality** has been one of the prime concerns for wildlife conservationists with and expanding infrastructure. According to govt.

Officers IAS Academy, Chennai sources 49 elephants were killed in Railway accidents between 2016 and 2018 in India; highest deaths occurring in Assam and West Bengal.

2. **Overhead transmissions lines, electric fences** pose significant threat of electrocution for birds, arboreal animals and even bigger mammals like elephants.

- **Barrier to movement:** Roads or other linear features restrict, or filter animal movement. The barrier effect on wildlife may arise from traffic noise, vehicle movement, pollution, human activity and physical hindrances.
- **Increased human-wildlife conflict:** Road and railways may disrupt normal habitats of animals forcing them to move out to human habitats thus increasing the risks of human-animal conflict.

#### Steps taken by Indian government:

- **Environment Impact Assessment (EIA) Notification of 1994:** As per the EIA notifications, any person undertaking new road construction, upgrading existing road sections, widening and conversion to multi-lanes or laying powerlines in any part of India need to submit an application to MoEFCC according to its guidelines and seek approval
- **Forest (Conservation) Act, 1980:** According to the Act, every project requiring conversion of forest land to non-forest land requires approval from MoEFCC
- **Supreme Court judgement (2013):** The SC has directed the railways to reduce the speed of trains, stop goods trains during night hours and develop alternate routes
- MoEFCC's advisory to railway and state governments to prevent collision of trains with wild elephants:
  1. Clearing vegetation on the sides of railway tracks,
  2. Underpasses/overpasses/girder bridges across vulnerable stretches of railway tracks to allow safe passage of elephants,
  3. Signage boards at selected points to alert train drivers
  4. Sensitization programmes for train drivers/guards/station masters
  5. Keeping railway tracks free from food wastes as that attracts elephants and other animals.

- In 2018, MoEFCC made the animal passage plan mandatory for all linear infrastructures in India.
- **ELETRACK (Animal Detection System to prevent train hits):**
  1. It is an automated system with sensors that detect mammals like elephants when they are in proximity to railway tracks.
  2. An audio-visual warning is then produced and simultaneous SMS alerts sent through a linked communications device to the station master to warn locomotive operators, and to forest staff to drive away the elephants or other animals.
  3. The system has been tested on a pilot basis between Walayar and Kanjikode in Kerala and also in Southern West Bengal.

### Challenges:

- **Development vs. Protection:** Linear infrastructure such as road, railways and powerlines are integral part of the national economic framework and key enablers of development. Striking a balance between infrastructure development and wildlife protection/conservation is the biggest challenge.
- **Lack of Comprehensive policy:** There is no national policy and appropriate rules for implementation of ecologically sound practices and alternatives to harmful linear intrusions in natural areas.
- **Unlawful Practices:** Many infrastructure projects opt unlawful practices in relation to project development, implementation, monitoring, and appraisal.
- **Poor Implementation:** The guidelines, advisories and legislations are not implemented. For example; Despite Ministry of Environment, Forest and Climate Change (MOEFCC) advisory titled 'Eco-friendly measures to mitigate impacts of linear infrastructure', deaths of wild animals in road and railway accidents have been on a rise.

### Way forward:

- **Prevention:**
  1. New linear infrastructure projects that disregard MoEFCC's guidelines and do not incorporate wildlife-friendly designs and required crossing structures should not be

Officers IAS Academy, Chennai permitted in designated protected areas and critical habitats.

2. There needs to be a revaluation of the existing roads and railway lines in Protected Areas and realigning/closure of these detrimental structures after necessary studies.
  3. Speed reduction of vehicles is an important measure to stop road kills and these are already being implemented. For e.g. speed breakers on the Mysore -Ooty road passing through Mudumalai Tiger Reserve.
- **Policy:** There is an urgent need for formulation of a comprehensive and broadly applicable national policy to address the adverse effects of linear infrastructure on wildlife.
  - **Smart and Green infrastructure:** It is important to adopt ecologically sound practices and alternatives to harmful linear intrusions in natural areas. Such measures could include natural crossings (e.g. Canopy bridges in Chakrashila Wildlife Sanctuary), underpass, overpasses etc.
  - **Technology:** Technological applications can help prevent rail/ road accidents by providing alerts to drivers and forest officials. For e.g. the use of ELETRACK.

### Half done

#### Introduction:

- India won global acclaim for its "Beat Plastic Pollution" resolve declared on World Environment Day last year, under which it pledged to eliminate single-use plastic by 2022.
- 22 States and Union Territories have joined the fight, announcing a ban on single-use plastics such as carry bags, cups, plates, cutlery, straws and thermocol products.
- Puducherry will implement a ban from March 1.
- Where firm action has been taken, positive results have followed. A Bengaluru waste collective estimates that the volume of plastic waste that they collect dropped from about two tonnes a day to less than 100 kg.

#### What needs to be done?

- Voluntary initiatives are having an impact in many States, as citizens reduce, reuse and sort their waste.

- Waste plastic from packaging of everything from food, cosmetics and groceries to goods delivered by online platforms remains unaddressed.
- It will take a paradigm shift in the manner in which waste is collected and handled by municipal authorities to change this.
- Governments must start charging the producers for their waste, and collect it diligently, which will lead to recovery and recycling.
- State and local governments are unwilling to upgrade their waste management systems, which is necessary to even measure the true scale of packaging waste.

#### Guidelines of the Plastic waste management rules,2016:

- The Plastic Waste Management Rules, 2016 are clear that producers, importers and brand owners must adopt a collect-back system for the plastic they introduce into the environment.
- The rules were notified in the same year, amended later and given high visibility by the Ministry of Environment, Forest and Climate Change, not much has been done to take the process forward.
- The local bodies should consult manufacturers or importers to assess the problem.
- Delaying such a measure has created the anomalous situation of small producers of plastics facing the ban, while more organised entities covered by the Extended Producer Responsibility clause continue with business as usual.

#### Way forward:

- Such enforcement failure is not an argument in favour of relaxing the prohibition on flimsy plastics that are typically used for under 15 minutes, but to recover thousands of tonnes of waste that end up in dumping sites.
- Cities and towns need competent municipal systems to achieve this.
- There is little doubt that plastics play a major role in several industries, notably in the automotive, pharmaceutical, health care and construction sectors.
- It is the fast-moving consumer goods sector that uses large volumes of packaging, posing a higher order challenge.
- Governments should show the same resolve here, as they have done in imposing the ban.

## Desalination plants harm environment: UN

### Introduction:

- According to a U.N. backed study, desalination plants across the world produce **highly salty waste water** and **toxic chemicals** that are damaging the environment.
- This study was part of research into how best to secure fresh water for a rising population without harming the environment.

### Findings of the study:

- Desalination plants around the world are pumping out far more **salt laden brine** than previously believed. The brine raises the level of salinity and poses a major risk to ocean life and marine ecosystems.
- Brine, water comprising **about 5% salt**, often includes toxins such as **chlorine and copper** used in desalination. By contrast, global **seawater is about 3.5% salt**.
- More than half the brine comes from **four Middle Eastern countries**.
- These are Saudi Arabia, the United Arab Emirates, Kuwait and Qatar, with **Saudi Arabia alone responsible for 22% of the effluent**.

### What is desalination?

- Desalination is the process of **removing salts from water** to produce water that meets the quality (salinity) requirements of different human uses.
- Seawater desalination can extend water supplies beyond what is available from the hydrological cycle, providing an “unlimited”, climate-independent and steady supply of high-quality water.

### Background:

- The “conventional” sources of water such as rainfall, snow-melt and river runoff captured in lakes, rivers, and aquifers are no longer sufficient to meet human demands in water-scarce areas. This is in direct conflict with **Sustainable Development Goal (SDG) 6**, aimed at ensuring the **availability of clean water for current and future generations**.
- While water demand mitigation approaches such as water conservation and improved efficiencies can somewhat close the water demand and supply gap, these approaches must be combined with

supply enhancement strategies in order to combat water scarcity.

- Among the water supply enhancement options, desalination of sea-water and highly **brackish water** has received the most consideration and is increasingly seen as a viable option to meet primarily domestic and municipal needs.

#### Impacts:

- There is an **increase in the temperature** of this zone of the sea, together they **decrease the dissolved oxygen level**, which is called **hypoxia** and that impacts the aquatic life in that zone.
- Hypoxia often leads to the formation of dead zones in the oceans. These zones have quadrupled since 1950, mainly as a result of climate change. Now the **excess salt is adding** to these problems.
- Since **brine is denser than seawater**, it sinks to the seafloor and disrupts vibrant communities of life, which find themselves wanting far less salt and far more oxygen.
- Desalination requires **large amount of energy to process seawater**, which is met by burning fossil fuels **contributing to global warming**.
- Compounding the problem is the ongoing expansion of desalination as more and more countries turn to the technology in the face of climate change which is exacerbating water shortages.

#### Way forward:

- The discharge (brine) can also contain precious **elements like uranium, strontium as well as sodium and magnesium** which have the **potential to be mined**.
- Brine has been used for **aquaculture, with increases in fish biomass of 300%**. It has also been successfully used to cultivate the dietary supplement Spirulina, and to irrigate forage shrubs and crops.
- There is a need to convert an **environmental problem into an economic opportunity**.
- This is particularly important in countries producing large volumes of brine with relatively low efficiencies.

#### Conclusion:

- Due to the relatively high economic costs, desalination is currently concentrated in high income and developed countries.
- There is a need to make desalination technologies more affordable and extend

Officers IAS Academy, Chennai them to low income and lower middle income countries, increasing the viability of desalination for addressing **SDG6** in areas that developments have previously been limited by high economic costs.

- To do this, technological refinement for low environmental impacts and economic costs, along with innovative financial mechanisms to support the sustainability of desalination schemes, will likely be required.

## Learning to compete

### Introduction

- In 2013, India's skill agenda got a push when the government introduced the National Skills Qualification Framework (NSQF). This organises all qualifications according to a series of levels of knowledge, skills and aptitude, just like classes in general academic education.
- For each trade/occupation or professional qualification, course content should be prepared that corresponds to higher and higher level of professional knowledge and practical experience.
- The framework was to be implemented by December 27, 2018. The Ministry of Skill Development and Entrepreneurship (MSDE) mandated that all training/educational programmes/courses be NSQF-compliant, and all training and educational institutions define eligibility criteria for admission to various courses in terms of NSQF levels, by that time.

### India Skills 2018

- In this background, MSDE held national skill competitions, or India Skills 2018 in Delhi.
- Now, teams will be selected to represent India at the 45th World Skills Competition, scheduled in Russia this year.
- However, there are two priorities requiring action before the next round of India Skills is held. There are five pillars of the skills ecosystem: the secondary schools/polytechnics; industrial training institutes; National Skill Development Corporation (NSDC)-funded private training providers offering short-term training; 16 Ministries providing mostly short-term training; and employers offering enterprise-based training.
- However, a majority of the participants of the India Skills competition were from

corporates (offering enterprise-based training) and industrial training institutes; only less than 20% were from the short-term courses of the NSDC. Neither industrial training institutes nor corporates' courses are aligned with the NSQF.

- This points to the need for more holistic training and the need to re-examine the narrow, short-term NSQF-based NSDC courses to include skills in broader occupation groups, so that trainees are skilled enough to compete at the international level.

#### Too many councils

- We must also reduce complications caused by too many Sector Skill Councils (SSCs) anchoring skill courses.
- World Skills holds competitions in construction and building technology, transportation and logistics, manufacturing and engineering technology, information and communication technology, creative arts and fashion, and social and personal services.
- To cater to these sectors, 19 SSCs participated in India Skills 2018 as knowledge partners with the help of industry or academic institutions. But India has 38 SSCs (earlier it had 40). Why did the others not participate?
- The first reason is that the representation of their core work was done by the other

Officers IAS Academy, Chennai SSCs. It was a mistake to create 40 SSCs. Outcomes have shown that they have been ineffective. If we want Skill India trainees to win international competitions and if we want competitors to come from schemes of the Ministry, we must find a way to provide broader skills in broader occupational groups.

- The second, and related, reason is that the other SSC courses were not comprehensive enough for students to compete. Most of their NSDC-SSC- approved training does not produce students who can showcase "holistic" skills for broad occupational groups in such competitions.
- Sectors should be consolidated in line with the National Industrial Classification of India. This will improve quality, ensure better outcomes, strengthen the ecosystem, and help in directly assessing the trainee's competence. It might also bring some coherence to our skills data collection system.

#### Way Forward

- Vocational education must be imparted in broadly defined occupational skills, so that if job descriptions change over a youth's career, she is able to adapt to changing technologies and changing job roles.
- Skill India needs a sharp realignment, if India is to perform well in the World Skills competition later this year.

# YOJANA JANUARY 2019 (Part I)

## INNOVATION

### Introduction

- Innovation at the heart of all progress of mankind are connected with the lives of the common man like Health, discovery of DNA profiling, stem cell research, organ donations, heart transplants, Innovations in satellites and rural connectivity have further boosted India's efforts to earn its rightful place in the comity of nations.
- The green revolution was an innovation that helped convert India into a food sufficient nation from a food scarce nation.
- The MHRD innovation cell (MIC), Atal Ranking of institutions of innovation achievements (ARIIA), GIAN, SPARC, Atal innovation mission and innovations in public systems like the BHIM App, e-NAM etc have contributed to the innovative spirit in India.
- The metro rail is one of the most innovative modern transport systems and has made a huge difference to the public transport system.
- Collective efforts by all relevant stakeholders and teaching young minds to think out of the box rather than just get through rote learning can make all the difference.

### MHRD innovation cell(MIC)

- Ministry of Human Resource Development has established MIC to foster the culture of Innovation in all Higher Education Institutions (HEIs) across the country.

### ARIIA

- Atal Ranking of Institutions on Innovation Achievements (ARIIA) is an initiative of Ministry of Human Resource Development (MHRD) to rank major higher educational institutions and universities in India on indicators related to "Innovation and Entrepreneurship Development" amongst students and faculties.

### Atal Innovation Mission

- Atal Innovation Mission (AIM) is Government of India's endeavour to promote generation of innovative ideas and entrepreneurship through Self-Employment and Talent Utilization.

### BHIM App

- Bharat Interface for Money (BHIM) is a payment app that was launched in 2016. It helps make simple, easy and quick transactions using Unified Payments Interface (UPI) through its ID or QR scan and brings in Financial Inclusion to the nation.

### DNA profiling

- Deoxyribonucleic acid (DNA) is a molecule that contains the instruction codes needed for development and function of an organism. The codes are made up of four chemical bases: adenine (A), guanine (G), cytosine (C) and thymine (T).
- Profiling is the process of obtaining a specific DNA pattern (profile) from a person or sample of body tissue.

### Scheme for Promotion of Academic and Research Collaboration (SPARC)

- SPARC aims at improving the research ecosystem of India's Higher Educational Institutions by facilitating joint academic and research collaborations with international relevance.

### Stem cell

- Stem cells are undifferentiated cells that can turn into specific cells, as the body needs them.
- They originate from two main sources: adult body tissues and embryos.

### The Global Initiative of Academic Networks (GIAN)

- GIAN programme was launched for Human Resource Development at the IIT Gandhi Nagar.
- It brings into practice the belief of 'Vasudhaiv Kutumbakam' for institutions, faculty and students to embrace new knowledge frontiers.

### e-NAM National Agriculture Market

- NAM is a Government promoted electronic trading portal which networks the existing mandis to a unified market for agricultural commodities.

## Scientific innovations in the service of society

### Introduction

- Innovation mostly indicates advancements. For example: A 32-bit microprocessor was

introduced in 1985, the Intel 80386 which was known as 386 was replaced by a 486 microprocessor after a few years, which was a high performance unit.

- At present quantum computing is at an experimental stage and expected that in few years this technology could bring changes in the IT sector in particular and ICT sector in general.
- Around the year 1948 the invention of the transistor replaced the vacuum tube.
- **Transistor** is a resistor or semiconductor device which helps amplify electrical signals as they get transferred through it.

### Quantum computing

- Quantum computing develops computer technology based on the principles of quantum theory at atomic and subatomic level.

### Historical perspective

- **The first industrial revolution** (1760 to 1840): Emergence of steam engine, textile industry and mechanical engineering.
- **The second industrial revolution** (1870 to 1914): Emergence of railways and steel industry.
- **The third industrial revolution** (1969 - 2000): Electric engine, heavy chemicals, automobiles and consumer durables.
- **The fourth industrial revolution** (Since 2000 or a few decades prior): ongoing phase of industrial revolution (industry 4.0). Developments in the oil industry, IT industry, science and technology have led the initial phase of industry 4.0.

### Innovation in various sectors

- Invention of penicillin during 1928 by the Scottish scientist Alexander Fleming is considered as the beginning of the modern era of medicine.
- During 2001, the secret behind the complete sequence of all 3 billion base pairs in the human genome was discovered.
- The discovery of DNA (Deoxyribonucleic acid), totally revolutionized the field of biology in parenthood testing and in solving crimes.
- The research on the stem cell, innovations in the organ donation field to replace (repair) eyes, lung, heart kidney, liver, pancreas or intestine have helped human race immensely.

- In wind, nuclear and solar power, biofuels, various clean options have been made available.
- A major innovation could happen when the current nuclear fusion reactors using hydrogen isotopes tritium and deuterium as the fuel would be replaced by helium -3.

### Why helium-3?

- Helium-3 is a light, non-radioactive isotope of helium with two protons and one neutron.
- Unlike other nuclear fusion reactions, the fusion of helium-3 atoms releases large amounts of energy without causing the surrounding material to become radioactive.
- Radioactive substances are atoms that decay naturally giving off alpha and beta particles and gamma radiation whose control is difficult.
- Helium -3 is not available on the earth's surface but available in abundance in moon.

### Innovation in modern technology

- For many years one of the best approaches to industrial production was considered as CNC (computer numerical control) machine.
- **CNC Machining** is a process used in the manufacturing sector since 1950s that uses computers to control machine tools to produce large, heavy, precision crafted industrial equipment, machines and engines.
- Technologies like Fog computing, cloud computing, big data and block chain are expected to impact the future of IoT, associated with the AI and Internet 2.0.
- **Internet of things** IoT is simply a means of connecting different sensor to a network.
- **Artificial intelligence (AI)** is a way of making a computer thinks intelligently, in a way the intelligent humans think.
- **Fog computing** enables computing, storage and networking services between end devices and cloud computing data centers.
- **Cloud computing** is a method for delivering information technology (IT) services, saved and retrieved from the Internet through web-based tools and applications, as opposed to a direct connection to a server.
- **Big data** describes a large volume of structured, semi-structured and

unstructured data that can be used for advanced analytics applications.

### Block chain technology

- A block chain is a list of records, called blocks, which are linked using cryptography.
- **Internet 2.0** is the name for the second generation of the World Wide Web, where static HTML pages are moved to a more interactive and dynamic web experience for people.

### Conclusion

- The fascinating aspect of modern Science and Technology innovations has been its evolutionary and adaptable nature which is expected to help humans to live more peacefully and happily.

## Capitalizing on technology for farmer's welfare

### Introduction

- Farming is both a way of life and means to livelihood for nearly 60% of our population, a majority of which are women and youth.
- The **National Commission on Farmers (NCF)** was constituted on November 18, 2004 under the chairmanship of Professor M.S. Swaminathan on issues such as moving towards the goal of universal food security, policies to increase flow of rural credit to all farmers, enhancing global competitiveness of farm commodities and empowering elected local bodies to conserve and improve on sustainable agriculture.

### The progress made in terms of Improving production and productivity

- Wheat production in India went up from 7 million tonnes in 1947 to over 100 Million tonnes in 2018.
- Ever since the publication of Mendel's laws of inheritance in 1865, innovations have taken place in the use of genetic knowledge for improving productivity and profitability of crops.

### Mendel's Laws of inheritance

- Gregor Mendel, through his work on pea plants, discovered the fundamental laws of inheritance.
- He deduced that genes come in pairs and are inherited as distinct units, one from each parent and have their appearance in

Officers IAS Academy, Chennai the offspring as dominant or recessive traits.

- Mendel's studies yielded three "laws" of inheritance: the law of dominance, the law of segregation, and the law of independent assortment.

### Significant decisions taken to improve the status of farmers

- Designating the Ministry of agriculture as **Ministry of Agriculture and Farmers' welfare** as a measure of agricultural progress
- Issue of **soil health cards (SHC)** to all farmers to promote adoption of balanced nutrition for plant health which is basic to human health.
- Allocation of both budgetary and non-budgetary resources for promoting micro irrigation under **Pradhan Mantri krishi Sinchayee Yojana (PMKSY)**
- Conservation and sustainable use of indigenous breeds of cattle through **Rashtriya Gokul Mission.**
- The creation of **Gramin Agriculture Markets (GrAMs)** provides scope for direct sales to consumers in both retail and bulk form.
- Introduction of **Agricultural produce and livestock marketing act, 2017** and **Agricultural produce and livestock contract farming services Act, 2018** supported by **electronic negotiable warehouse receipt (eNWR)** system.
- Determination of minimum support price and Increase in the income of farmers through activities like apiculture, mushroom cultivation. Bamboo production, agri forestry, Vermi compost and additional related jobs.
- As per the Government's notification: From kharif 2018 onwards, the Minimum support price (MSP) of the notified crops would be minimum of 150% of the cost of production and for coarse cereals up to 200%.
- **Minimum support price (MSP)** is the price fixed by Government of India to protect the farmers against excessive fall in price during bumper production years as a guarantee price for their produce.

### Cropping seasons

- **Kharif(Autumn):** Crops are sown at the beginning of the south-west monsoon and harvested at the end of the south-west monsoon.

- Kharif crops are Sown in May to July and Harvested in September to October.
- Important crops: Jowar, bajra, rice, maize, cotton, groundnut, jute, sugarcane, tobacco, etc.
- **Rabi (spring):** Crops need relatively cool climate during the period of growth but warm climate during the germination of their seed and maturation.
- Rabi crops are Sown in October-December and Harvested in February-April
- Important crops: wheat, barley, gram, linseed, mus-tard, masoor, peas and potatoes.
- **Zaid:** Zaid kharif crops are sown in August-September and harvested in December-January.
- Important crops: rice, jowar, rapeseed, cotton, oilseeds.
- Zaid rabi crops are sown in February-March. Harvesting is in April-May.
- Important crops: watermelon, toris, cucumber, leafy and other vegetables.

#### **Agricultural produce and livestock marketing act, 2017**

- The act provides for progressive agricultural marketing reforms like farmer-consumer markets, de-regulation of fruits and vegetables, e-trading, single point levy of market fee, unified single trading license, declaring warehouses as market sub-yards and Market Yards of National Importance (MNI) so that more markets are available for farmers to sell their produce for better prices.

#### **Agricultural produce and livestock contract farming services Act, 2018**

- The Model Contract Farming Act covers the entire value and supply chain from pre-production to post harvest marketing including services contract for the agricultural produce and livestock.

#### **Electronic negotiable warehouse receipt (eNWR)**

- A warehouse receipt is a document that provides proof of ownership of commodities which are stored in a warehouse or vaults for safekeeping.
- The warehouse receipts are collateral for loans which allow transfer of ownership of that commodity without delivering the physical commodity.

#### **Anticipatory research in an era of climate change**

- Mangroves (as bio-shields) help to save both lives and livelihoods particularly of fisher and coastal communities.
- A charter for mangroves was prepared and with the help of the government of Japan and IITO, an International society for mangrove ecosystems (ISME) was formed in 1990.
- ISME took initiatives under UNDP/UNESCO Regional Mangrove projects with the Statutes that "the Society shall collect, evaluate and disseminate information on mangrove ecosystems" and "promote international cooperation."

#### **Bio shields**

- A 'bio-shield' is formed by planting a vegetation belt along coastlines that protects the land against future coastal storms, cyclones and tsunamis.
- The plantations also act as a 'carbon sink' by absorbing carbon dioxide.

#### **Conclusion**

- Progress in technological innovation has become more rapid but there are risks and benefits associated with new technologies.
- E.g. Pesticides including DDT can cause long term harm because of their long residual toxicity. This is why, before taking the new technology to the field, it is important that they are assessed for their positive as well as potentially negative effects.

### **Space programmes: Spin offs for humanity**

#### **Introduction**

- GSAT -11 is the largest and heaviest (5854 Kg) communication satellite into orbit.
- This mission GSAT-11 will fulfil yet another goal of Sarabhai to use high technology for the benefit of the common man.
- It was successfully launched from the spaceport in French Guiana on 5th December, 2018.
- It will provide high data rate connectivity to users of Indian mainland and islands through 32 user beams using Ku-band and 8 hub beams in Ka-band.
- It will also boost the broadband connectivity to rural and inaccessible Gram panchayats under the Bharat Net project which is a part of digital India programme.

- The Bharat Net project aims to enhance the public welfare schemes like e-banking, e-health and e-governance among others.

### L,Ku,Ka bands

- The “band” refers to the radio frequencies used to and from the satellite.
- L-band uses frequencies in the 1 to 2GHz range.
- Ku-band utilizes approximately 12-18GHz
- Ka-band services use the 26.5-40GHz segment of the electromagnetic spectrum.

### Progress so far

- Indian launch vehicles like PSLV, GSLV have proven track record and space is going to be the next frontier for human exploration and presence of humans in outer space.
- PM in the 2018 Independence Day declaration said that India will be having its own human space flight in 2022.

### Launch vehicles

- **SLV (Satellite Launch Vehicle)** project was started by ISRO, in the early 1970s, to develop the technology needed to launch satellites.
- **PSLV (Polar Satellite Launch Vehicle)** is designed mainly to deliver the “earth-observation” or “remote-sensing” satellites with lift-off mass of up to about 1750 Kg to Sun-Synchronous circular polar orbits of 600-900 Km altitude.
- An orbit is called sun-synchronous when the angle between the line joining the centre of the Earth, the satellite and the Sun is constant throughout the orbit.
- **GSLV (Geosynchronous Satellite Launch Vehicle)** is designed to deliver the communication-satellites to the highly elliptical Geosynchronous Transfer Orbit (GTO) viz Geo-synchronous Earth orbit (GEO) of about 36000 Km altitude.
- Due to their geo-synchronous nature, the satellites in these orbits appear to remain permanently fixed in the same position in the sky, thus reducing the need of a tracking ground antenna and hence useful for the communication applications.
- **ASLV (Augmented Satellite Launch Vehicle)** are expendable satellite launch systems operated by the Indian Space Research Organization (ISRO).

### Developments Required

- Important developments related to the human space flight are the overall reliability of the launch vehicle.

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- Once in orbit, the capsule will be in almost zero G condition and hard vacuum and will be subjected to heavy radiation which requires training of astronauts to face zero gas.

### Zero G condition

- Zero Gravity or Zero-G can simply be defined as the state or condition of weightlessness. It also refers to the state in which the net or an apparent effect of gravity (i.e. the gravitational force) is zero.

### Reliable vehicles

- The PSLV and GSLV have emerged as reliable satellite launch vehicles globally due to which other countries like USA, Europe and Canada approach ISRO for launching their satellites.
- Demonstrated reliability of these launchers are around 95%.
- At present the only launcher available for the free world for human space flight is Russian Soyuz rocket. The Chinese Long March is used only for their national needs.

### Way forward

- It will provide a platform for detailed observation of planet earth, scientific observation and biological experiments under Zero G condition to generate benefits, sending people to moon and Mars and colonizing them.
- Innovative solutions to combine optical and microwave images from such platform from 36000 km is required.
- The variation in magnetic and electric field around the earth can be monitored using satellites to give indication of earthquakes which needs to be validated and efforts utilized.
- Today telemedicine is limited to remote consultation but the day is not far off when even telesurgery can be done using satellite connectivity.

## Inspiring innovators of tomorrow

### Introduction

- In the contemporary Indian society, there is paramount focus on innovation to solve unmet needs, its successful execution and improved performance in the global innovation Index.

### MANAK

- INSPIRE Awards –MANAK is the world's biggest idea and innovation competition for school children jointly implemented by the department of science and technology

(DST) and national innovation foundation - India (NIF) and aligned with the Startup India.

### **The key purpose underpinning INSPIRE**

- To help country build a critical human resource pool of students from all Government and private schools throughout the country and enabling them to send their original and creative technological ideas and innovations.
- Nearly 7 lakh schools in India are required to conduct idea competitions for students in class 6th to 10<sup>th</sup> and nominate the best ideas through online portal to participate in district, state and national level exhibition project competition.
- About one lakh selected students whose ideas are shortlisted are one time supported financially through the direct benefit transfer (DBT).
- Top 60 are taken up for incubation to acquire the status of startups and be commercialized.

### **Direct benefit Transfer (DBT)**

- DBT was started in 2013 to re-engineer the existing process in welfare schemes for easy and fast flow of information/funds to the targeted beneficiaries and reduction of fraud.

### **Conclusion**

A major differentiator that characterize INSPIRE Awards -MANAK is its unique ability to offer "exposure" to students at an early stage itself which counts a lot few years later in one's career.

## **Nano Mission**

### **What is Nano mission?**

- The Nano Mission is a programme of Government of India for development in the field of Nano technology through studies, research and innovation.

### **Nano technology**

- Nanotechnology is the science, engineering and technology that study the application of extremely small things.
- The idea behind Nanoscience and nanotechnology was started by Richard Feynman and popularized by K. Eric Drexler in the 1980's.
- One nanometre is a billionth of a meter or  $10^{-9}$  of a meter which is smaller than the wavelength of visible light.

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- Acknowledging its potential, the Department of Science and Technology (DST) launched a programme called Nano Science and Technology Initiative (NIST) in 2001.
- Nano mission is successor of this programme approved in 2007.
- Today India has emerged 6th worldwide in terms of scientific publications.

### **Nano mission**

- The Nano Mission aims to achieve synergy between the national research efforts of various agencies in Nano Science and Technology along with International collaborations.

### **Objectives of the Nano Mission**

- Research promotion through funding by scientists and creation of centres of excellence.
- Infrastructure development for Nano science and technology research.
- Promote application-oriented Research by establishing Nano applications and technology development center, Nano Technology business incubators or through Public private partnership (PPP) ventures.

### **PPP ventures**

- A public-private partnership is between a government agency and private-sector company to finance, build and operate projects with contract periods of 25 to 30 years or longer.
- The private partner participates in designing, implementing and funding the project, while the public partner focuses on defining and monitoring the objectives.
- Risks are distributed between both as per the ability to assess, control and cope with them.
- Public-private partnerships are typically found in highways, airports, railroads, bridges, tunnels, and water and wastewater facilities.

### **Departments involved:**

- The department of Science and Technology is the nodal agency for implementing the Nano Mission and at the apex level it is steered by a Nano Mission Council (NMC).
- The technical programmes of the Nano Mission are guided by two advisory groups viz the Nano Science Advisory Group (NSAG) and Nano Applications and technology Advisory Group (NATAG).