CURRENT AFFAIRS
WEEKLY

WEEK: 3 OCTOBER 2021

MAINS

GS-I IMPACT OF GENDER RESERVATION IN INDIAN URBAN LOCAL BODIES (ULB)

GS-II INDIA'S MIGRANT CONSTRUCTION WORKERS: AN ANALYSIS OF THEIR WELFARE FRAMEWORK

GS-II SC QUESTIONS RATIONALE FOR FIXING THE INCOME LIMIT IN EWS CATEGORY

GS-III LAUNCH OF ISPA

GS-III DATA REVOLUTION IN INDIAN AGRICULTURE

GS-IV INVESTIGATIVE JOURNALISM AND ELEMENTS OF ETHICS

PRELIMS

ART & CULTURE
- The need to use India's historic water management systems

INTERNATIONAL RELATIONS
- Dr. Abdul Qadeer Khan, Father of Pakistan Bomb dies
- IEA invites India to become full-time member
- World Mental Health Day 2021

POLITY & GOVERNANCE
- Lok Adalat has no jurisdiction to decide a matter on merits: Supreme Court
- National Green Tribunal can take up environmental issues on its own: SC
- Nepali Congress delegation visiting India against highlights the Kalapani issue

ENVIRONMENT
- A clean, healthy and sustainable environment is a 'universal right': UNHRC
- New Cicada varieties: Nagaland

SCIENCE & TECHNOLOGY
- Covaxin gets approval by DGCI for kids in 2-18 age group
- C-DOT to start 6G technology
- Intermediate-Mass Black Hole

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— Disclaimer —

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

CONTENTS

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IAS 2022
GS FOUNDATION

IAS 2022
GS MAINS CLASSES
ONLINE & OFFLINE

BATCH STARTS
18 OCTOBER 2021

PATHWAYS
for UNDER GRADUATES
3 & 2 Year IAS FOUNDATION PROGRAMME

BATCH STARTS
21 OCTOBER 2021

GS SYLLABUS *through* CURRENT ISSUES
GS ANALYST
PROGRAMME *for* ANALYSIS *of* CURRENT ISSUES *&* GS ENRICHMENT

BATCH STARTS
16 OCTOBER 2021

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Subject	By	Batch Starts
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HISTORY FOUNDATION 2022	By: PIYUSH KUMAR	BATCH STARTS **21** OCTOBER
POLITICAL SCIENCE FOUNDATION 2022	By: KUMAR UJJWAL	BATCH STARTS **22** OCTOBER
ANTHROPOLOGY FOUNDATION 2022	By: DR. SUDHIR KUMAR	BATCH STARTS **22** OCTOBER
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SECTION: A
(MAINS)

CURRENT AFFAIRS

IMPACT OF GENDER RESERVATION IN INDIAN URBAN LOCAL BODIES (ULB)

CONTEXT:

Twenty-five years have passed (since the Bill for women reservation was first introduced in the parliament in 1996) but we are yet to realise the reservation of one-third of seats for women in the Lok Sabha and state legislative assemblies.

The women Reservation Bill continues to languish but the reservation in urban local bodies (ULBs) has made a significant contribution towards narrowing down the gender divide when it comes to women representation at the grass-roots level of democracy.

◉ BACKGROUND:

- **Presently there are 79 women** MPs in Lok Sabha as compared to 24 women members in the first Lok Sabha.

- It needs to be appreciated but a lot more has to be done.

- The scenario changes when it comes to urban local bodies.

- The changes started taking shape as early as 1992, with the 74th constitutional amendment act came into existence, which pioneered gender reservation at the sub-national level.

> **India** ranks **148th** globally in terms of representation of women in executive government and parliament, according to a report published by the **Inter-Parliamentary Union (IPU)** and **UN Women.**

◉ ANALYSIS:

The **74th Constitutional Amendment of 1992** not only mandated gender reservation but also provided constitutional safeguards to the long due demand for ensuring female representation in the polity at the sub-national level. The relevant features are:

- It provided for the women reservation of **not less than 33 percent** of the total number of seats in the urban local bodies (ULBs) mandatory.

- Also, **not less than 33 percent** of seats are further reserved for the **women belonging to SC/ST communities.**

- At least **33 percent** of the offices of **chairpersons in urban local bodies** are reserved for women.

- To ensure that the effect of the reservation is evenly spread across all the geographical areas of the city, the reserve seats are allotted to different territorial constituencies on a **rotational basis.**

> **Article 243T(3):** Not less than one third (including the number of seats reserved for women belonging to the Scheduled Castes and the Scheduled Tribes) of the total number of seats to be filled by direct election in every Municipality shall be reserved for women and such seats may be allotted by rotation to different constituencies in a Municipality.

Going a step ahead:

- The constitution has only fixed the minimum percentage of gender reservation in urban local bodies (ULBs). But some states have exceeded this prescribed threshold and has provided 50 percent reservation for women in ULBs.

- The states which make to this exclusive list are Andhra Pradesh, Kerala, Maharashtra and Tripura.

- The election of women at the local government level, particularly from unreserved seats conveys the overwhelming presence of women in the above-mentioned states four states.

Benefits of gender reservation in Urban Local Bodies:

- **Bringing women into political domain:** It has successfully brought out women from the kitchen and home and launched them into the domain of local politics.

- **Step towards gender equality:** It has added to the cause of women's empowerment and gender equality.

- **Career opportunity:** Many liberated women have made a thoughtful decision to make politics a career and have exhibited abilities that are at par with male councillors.

- **Breaking stereotype:** The constructive modifications brought by the women have enabled them to break the glass ceiling of gender prejudices held by society.

- **Social welfare:** Community welfare, health and poverty reduction appeal to women and they are more likely to work on them with vigour.

- **Encouragement for others:** Occupying positions like chairperson or mayor in statutory municipal committees has a multiplying effect that encourages other young women and girls.

What are the challenges in ensuring women participation in politics?

- **Poor implementation of reservation policies:** Despite catapulting women into the arena of local polity, the gender reservation has failed to pave the path for women to move into the state and national politics.

  ➤ **Presently there are less than 15 percent women legislators in parliament and assemblies.**

- **Gender inequalities within party structure:** The existence of **gender inequalities** in **party hierarchies** has kept women away from key governance posts. It has to some extent negated the impact of the effective implementation of women reservations.

- **Proxies for male counterparts: Wide-spread tokenism** exists within gender reserved seats where wives of the councillors have stepped into the shoes of husbands. By doing so the husbands continue to controls the wards as elected wives work as proxies for their husbands. The practice of **"sarpanch pati"** exercises undue influence on the work of their wives elected to power.

Going Beyond Women Empowerment:

- Objectives of gender reservation in ULBs must see the bigger picture, which is more than 'women empowerment' and 'gender justice'.

- **More focus on women-centric issues:** Despite women constitutes almost half of the city population, it is unfortunate to see that no attention has been given by the women councillors to the problems which are mainly women-centric. Issues related to urban women needs should be given much-needed attention.

- **Improving the contribution:** Steps need to be taken to towards improving the contribution of the women workforce in Indian cities.

- **Easy access to required service:** Access to housing and public transport from homes to workplaces should be provided to both low wage employees and those who work from offices.

- **Strong support system:** Women with small children need a support system that can take care of their children, enabling them to pursue employment activities.

  ➤ Assistance through support services to women-led households, where they are the sole providers.

  ➤ Shelter and support programmes for elderly and abandoned women. Also including the women that have been subjected to domestic violence.

◉ CONCLUSION:

It is sad that not much has been done by the women councillors in the above-mentioned areas despite having significant representation in the ULBs. It suggests that there is a need for **capacity building programmes tailored for women councillors** to enable them to discharge the normal function of councillors and also **focuses on the customised needs of women in the cities**. The discrimination of women councillors from their own party and from the residents whom she represents needs to be stopped. Undeniably the gender empowerment and gender justice have played a significant role but they must get translated into ameliorating the lives of women in the urban centres. It must influence the process of recruitment by grassroots mobilisation of female constituents into politics.

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INDIA'S MIGRANT CONSTRUCTION WORKERS: AN ANALYSIS OF THEIR WELFARE FRAMEWORK

CONTEXT:

The consequence of the widespread coronavirus (Covid-19) pandemic has shown its devastating consequence on almost every section of society. Construction worker which is one such category of people in the list of affected, which has witnessed unprecedented 'reverse migration' during the pandemic.

⊙ BACKGROUND:

- The Covid-19 induced migration was the second-largest mass migration in Indian history after the country's partition in 1947.

- Every year migrant workers, usually employed in informal, low skilled, risky jobs in construction, agriculture and domestic work migrate from rural areas to urban centres of economic activities.

- Low wages coupled with food insecurity further adds to their misery.

⊙ ANALYSIS:

- The construction workers by their very nature are nomadic, and they move from site to site for their work and sometimes moves their residences close to the construction sites.

- Even if they produce a document to prove their residence, the probability is high that it would not correctly reflect their present address.

- This makes them more vulnerable among others, not only in terms of socio-economic security but also while realising their basic rights.

Construction Worker:

- They are usually either landless or landowners with small landholdings.

- They come from poverty-stricken families with low or no level of education.

- They find work opportunities at building erection work, road making, stone breaking and bricklaying etc.

Statistics on workers:

- Construction work is a labour-intensive employment option that employs over **74 million people,** as stated by **NSSO (2016-17).**

- The share of the construction sector to the real growth rate of the gross value added at basic prices has touched **6.8 per cent during 2016-2019.**

- According to census 2011, the interstate migrant worker makes 35.4 percent of all the construction workers in the urban areas.

- About 26 percent of all households involved in the construction sector have a minimum of three members with at least two working adults from different genders indicating the prevalence of **nuclear families with children**, which can be considered as **associational migrants in construction.**

Linkage between Migration and Economy:

- It is the **disequilibrium of the economy** that forces the poor unemployed person to migrate from their homes to industrialised urban places.

- The economic growth of the economically most advanced states in India is more or less an outcome of hard work put on by the migrant workers.

- Socio-economic reasons like marriages and movement of the earning person in search of employment etc are the main forces that drive migration.

Problem Associated Construction Work:

- A large section of the working-age migrant population finds employment opportunities in the informal sector of the economy, which had denied them any access to social security benefits owning to nationwide lockdown.

- It can be said that the **spatial distribution of economic growth** has been confined to pre-existing and nearby centres of growth. This further **aggravates the pre-existing disparities** in terms of economic growth and the availability of livelihood opportunities between the resource-poor regions and the cities.

Legal safeguards and Welfare Schemes:

- **Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act (Main Act):** It regulates the employment and conditions of service of building and other construction workers and provide for their safety, health and welfare measures.

- **Building and Other Construction Workers Welfare Cess Act (Cess Act) (BOCWWB):** It has provision for the levy and collection of a cess on the cost of construction incurred by employers to supplement the resources of the Building and Other Construction Workers' Welfare Boards.

◉ This measuredirects the institution of **Construction workers welfare boards (CWWB)**, which is a tripartite entity with equal representation from:

➤ Workers

➤ Employers

➤ Government

The Construction Workers Welfare Board **(CWWB)** is tasked with the duty of register all the construction workers and promote the welfare of the registered workers through the various schemes.

◉ Provision for the collection of a **cess at the rate of 1 per cent** of the total cost of construction is mandated by the above-mentioned legislation in order to provide welfare benefits under state CWWB's.

◉ Indicative welfare benefits are listed out in the Act and include medical assistance, maternity benefits, accident cover, pension, educational assistance for children of workers, assistance to family members in case of death, group insurance, loans, funeral assistance and marriage assistance for children of workers.

◉ **Provisions in EPF:** It provides coverage to all construction workers under the Employees Provident Fund & Miscellaneous Provisions Act 1952. Unfortunately, only 2.2 percent of the total construction workers are availing social security benefits of any kind and only 1.5 percent of regular workers are eligible for benefits from EPF. This depicts the vulnerable condition of the construction migrant workers.

> **Prime Minister's Garib Kalyan Package (PMGKP)**: Under **(PMGKP)** financial assistance is given to building & other construction workers (BOCW) which largely included migrant workers from the funds collected under BOCW's cess.

Flaws in the implementation of Welfare programmes:

◉ Sluggishness with regards to registration of workers as the registration rates are not very high. Rates of registration are extremely low in Assam and Bihar (less than 20 percent).

◉ The variation in the number of active or valid registration in relation to the total number of registered construction workers.

◉ The collection of Cess for the **BOCWWB** and its proper distribution among workers highlights the issues in the implementation of the mentioned provisions.

◉ **Under-assessment of Cess** is another major concern. In 2019 only 39 percent of the collected Cess has been disbursed to the workers.

> A report from the Parliamentary Standing on labour 2017-18, Ministry of Labour indicate that there are around 55 million construction workers and only 20 million of them would avail benefits in Direct Benefit Transfer (DBT) mode.

◉ States like Delhi and Chhattisgarh has reported the registration of more than 100 percent, indicating the possibility of duplicate or fraudulent registrations.

◉ CONCLUSION:

There is an urgent need for the administration to intervene and reduce the gap between Cess collected and money spent on welfare activities under the aegis of CWWB's. The judicial intervention in few cases appears to be the silver lining. It is going to be a joint effort of the state and the judiciary to realise the benefits to all workers and do away with laxity of any sort in the registration of workers with the boards.

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SC QUESTIONS RATIONALE FOR FIXING THE INCOME LIMIT IN EWS CATEGORY

CONTEXT:

The Supreme Court questioned the Centre's rationale for fixing the income limit for inclusion in the Economically Weaker Sections category at Rs 8 lakh per year.

⊙ BACKGROUND

- In 2019, the Central government had extended EWS reservation in education and jobs to poorer sections with an annual income of less than Rs 8 lakh.

- This is meant for sections of society not covered by any reservation.

- In the latest development, SC was hearing a group of petitions challenging the:
  - ➤ **27%** reservation for Other Backward Classes
  - ➤ **10%** reservation for the EWS category in all-India quota seats in post-graduate medical courses.

- From among the candidates who clear the National Eligibility Entrance Test, 15% seats in MBBS courses and 50% seats in MS and MD courses are filled through the all-India quota.

- The petitioners, who are NEET aspirants, also questioned whether an annual income of Rs 8 lakh was a valid criterion for being included in the EWS category.

⊙ ANALYSIS

Questions asked by SC

- Have the government done any exercise?

- Have the government checked the GDP per capita for every State?'

- Whether the government, without application of mind, had simply decided to extend the 'creamy layer' cap of Rs 8 lakh for Other Backward Classes (OBC) to the EWS quota also.

Why Court's questioning holds significance?

- The court's questions hold significance as the 103rd Constitutional Amendment Act of 2019 has been challenged in the Supreme Court and is being examined by a larger bench.
  - ➤ The Act introduced the 10% EWS quota.

- It has been challenged for making economic criterion the only ground under which the EWS reservation benefits will be granted.

- The Supreme Court also asked whether the Centre had simply extended the income limit for the creamy layer among OBC to the EWS category as well.

Need to refer to a larger bench

- A reference to a larger Bench means that the legal challenge is an important one.

- As per **Article 145(3)** of the Constitution, "the minimum number of Judges who are to sit for the purpose of deciding any case involving a substantial question of law as to the interpretation of this Constitution" shall be five.

- The Supreme Court rules of 2013 also say that writ petitions that allege a violation of fundamental rights will generally be heard by a bench of two judges unless it raises substantial questions of law.

- In that case, a five-judge bench would hear the case.

- Laws made by Parliament are presumed to be constitutional until proven otherwise in court.

Centre's reply

- The Centre said fixing a limit of Rs 8 lakh annual income for the EWS category is a matter of policy based on the National Cost of Living Index.

- On the question of applicability of Rs 8 lakh everywhere in the country, the Centre replied that even within a state, there will be different parameters. For example
  - ➤ In Maharashtra, different parameters will be there for Gadchiroli and Mumbai
  - ➤ For UP, different parameters will be there for Ghaziabad, or Western UP or Behraich

Why the Law was challenged?

The law was challenged primarily on two grounds.

- **Violating the Basic Structure of the Constitution:** This argument stems from the view that the special protections guaranteed to socially disadvantaged groups is part of the Basic Structure and that the 103rd Amendment departs from this by promising special protections on the sole basis of economic status.

- **Violating the fundamental right to practise a trade/profession:** Another challenge has been made on behalf of private, unaided educational institutions. They have argued that their fundamental right to practise a trade/profession is violated when the state compels them to implement its reservation policy and admit students on any criteria other than merit.

What is Constitution (103rd Amendment) Act, 2019?

- The Constitution (103rd Amendment) Act, 2019, has amended two fundamental rights -**Article 15 and Article 16 by inserting:**

  ➤ Article 15(6) enables the State to make special provisions for the advancement of any economically weaker section of citizens, including reservations in educational institutions.

  ➤ **Article 16 (6)** is added to provide reservations to people from economically weaker sections in government posts.

The amendment aims to provide reservation to those who do not fall in 15(5) and 15 (4) (effectively, SCs, STs and OBCs) i.e. economically weaker sections for admission to educational institutions other than the minority educational institutions referred to in **clause (1) of Article 30**

How the Act treats unequals equally?

- The income limit of Rs. Eight lakhs and the asset limits prescribed for determining economic backwardness are the same as the limits fixed for determining the 'creamy layer' for OBC.

- This essentially means that the 103rd Amendment practically removes the difference between the OBC-NCL and the "EWS other than SC, ST and OBC-NCL".

- **Creamy layer-** whose yearly income is more than Rs 8 lakh or government employees of greater than class 3
- **Non-Creamy layer**- Whose yearly income is below Rs 8 lakh or government employees of class 3 or below 3
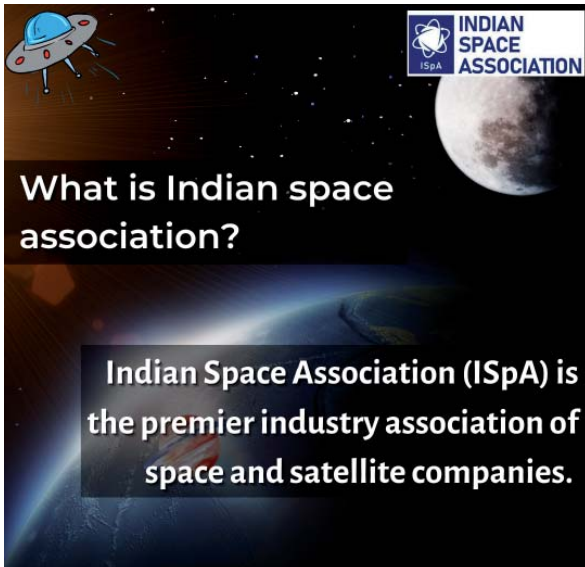

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LAUNCH OF ISPA

CONTEXT:

Recently, the Prime Minister launched the Indian Space Association (ISpA) – mooted to be the premier industry association of space and satellite companies.

◉ **ANALYSIS**

What is it?

- Indian Space Association (ISpA) is an industry body consisting of various stakeholders of the Indian space domain.
- ISpA will be represented by leading domestic and global corporations that have advanced capabilities in space and satellite technologies.
- Indian Space Association would help in facilitating the collaboration between private and public players and would lead to India's space mission growing in an organised way.
- The association will engage with stakeholders across the ecosystem for the formulation of an enabling policy framework that fulfils the Government's vision.
- ISpA will also work towards building global linkages for the Indian space industry to bring in critical technology and investments into the country to create more high skill jobs.

Stakeholders of ISpA
- The members of the organisation include government bodies such as Indian Space Research Organisation (ISRO) and private telecom companies such as Bharti Airtel's One Web, Tata Group's Nelcom, L&T, MapMyIndia, and others.

What does ISpA aspire to achieve?

- ISpA aims to contribute towards the accelerated development of India's space industry and making the country a leading player in this segment. It aims to contribute to the Government of India's vision of making India Atmanirbhar and a global leader in the space arena, which is fast emerging as the next growth frontier for mankind.
- The association will engage with stakeholders across the ecosystem for the formulation of an enabling policy framework that fulfils the Government's vision.
- ISpA will also work towards building global linkages for the Indian space industry to bring in critical technology and investments into the country to create more high skill jobs.

Why is a dedicated body like ISpA needed?

Though India too has made significant strides in space exploration over time, state-run ISRO has been at the centre and front of this progress. Several private sector companies, however, have shown an interest in India's space domain, with space-based communication networks coming to the fore. Of late, ISRO's rockets have been carrying the payload and communication satellites of various countries; now, private players will also look to broach this space with the new organisation.

Significance of ISpA

- Globally, private enterprises like SpaceX are increasingly contributing to unlocking the possibilities of space.
- It will emerge as a forum of the space industry in the Indian private sector and partner the Government of India and other key stakeholders across space industry segments in making the nation self-reliant in the area as well as to become a global service provider.
- ISpA could help develop the capacity to design, build and launch larger satellites for clients all around the world. This would happen more efficiently if there were multiple players competing and pitching in to research this.

- Satellite-based internet services could also take broadband access to remote areas, which are difficult to link through terrestrial networks. This is hugely important for the "Digital India" concept to work evenly across the nation.

- The progress of the space sector can help people in their daily lives, through better imaging, mapping and connectivity facilities.

Apart from this, farmers can take advantage of forecast technologies in order to better protect the ecology from any impending adversities, while entrepreneurs can harness the space sector to quicken the speed of operations from shipment to deliveries.

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DATA REVOLUTION IN INDIAN AGRICULTURE

CONTEXT:

Two significant documents relating to the Indian agriculture sector were released recently. The first is a consultation paper on the India Digital Ecosystem of Agriculture (IDEA) from the Ministry of Agriculture and Farmers' Welfare (MoA&FW) and the second on Indian Agriculture: Ripe for Disruption from a private organisation, Bain and Company.

◉ BACKGROUND

- Agriculture is a key pillar of Indian economy but continues to be beset with structural drawbacks.
  - ➤ Average landholding size has declined from 1.15 hectares in 2010-11 to 1.08 hectares; with around 68 per cent marginal farmers and value chain of most crops continues to consist of multiple intermediaries.
- While **production and supply chain inefficiencies** abound keeping farmers small and marginal, the nation is catching up with global trends of both consumption (organic, healthy, convenience) and calls for sustainability.
- There is an immediate need for disruption in the sector led by data and innovative technology, as it has potential to
  - ➤ solve for problems of scale
  - ➤ reduce information asymmetry
  - ➤ allow for supply chain disintermediation to make farming more profitable, inclusive and equitable

◉ ANALYSIS

How is data revolution, a global revolution?

- We are living in the age of information that is called data by researchers from which inferences can be drawn and conclusions reached.
- The quality, quantum, and coverage of data determine how effectively the decisions arrived at will fulfil our aims and objectives. The value of data is in their use.
- Every organ, agency, or institution in a democratic set up is ultimately accountable to the public for every decision and action.
- Hence, it is virtually a global revolution towards the rule of data or Data Raj.

Internet penetration in India

- India has over 1 billion mobile phone connections and over 500 million smartphone users.
- Backed by the lowest mobile data rates in the world, India is more than ready for digitisation.

- Rapid proliferation of mobile technologies in rural populations could let farmers in these areas to improve productivity based on decision made backed by better information grounded on Big Data.

Data Revolution in India

- Data enabled digital tools offered by startups like Agribazaar, Crofarm and DeHaat are providing market access, price information.
- They are being used to buy and sell agricultural produce, therefore managing food supply and averting possible scarcity.
- Recent progress in **Big Data** and advanced analytics capabilities and agri-robotics such as aerial imagery, sensors, and sophisticated local weather forecasts can truly transform the agri-scape and thus holds promise for increasing global agricultural productivity over the next few decades.

What is Big Data in Agriculture?

- Big data in the agriculture industry relies on the utilization of information, technology, and analytics in order to create useful data that can be utilized by farmers.
- Big data can be used to provide information for the agricultural industry as a whole, or it can help specific segments or locations with improving their efficiency.
- In order to create this vital information, big data relies on data mining processes.
- Various modern systems such as machine learning statistics, artificial intelligence, and database systems form the tools of big data mechanics.

Government steps

- **Digital agriculture mission:** A Digital agriculture mission has been initiated for 2021 -2025 by government for projects based on new technologies like artificial intelligence, block chain, remote sensing and GIS technology, use of drones and robots etc.

○ **Agristack:** Department of Agriculture, Cooperation and Farmers Welfar has entered into a Memorandum of Understanding (MoU) with Microsoft Corporation to start a pilot project in 100 villages of Uttar Pradesh, Madhya Pradesh, Gujarat, Haryana, Rajasthan and Andhra Pradesh. The MoU requires Microsoft to create a 'Unified Farmer Service Interface' through its cloud computing services. This sets in motion the ministry's plan of creating 'AgriStack' (a collection of data driven technology-based interventions in agriculture), on which everything else will be built.

○ **NeGPA:** A Centrally Sponsored Scheme namely National e-Governance Plan in Agriculture (NeGPA) was initially launched in 2010-11 in 7 pilot States, which aims to achieve rapid development in India through use of Information & Communication Technology (ICT) for timely access to agriculture related information to the farmers.

○ **Unified Farmer Service Platform (UFSP)**: UFSP is a combination of Core Infrastructure, Data, Applications and Tools that enable seamless interoperability of various public and private IT systems in the agriculture ecosystem across the country.

○ **Farmers Database:** For better planning, monitoring, policy making, strategy formulation and smooth implementation of schemes for the farmers a nationwide Farmers Database linked with land records is being created. This Centralized Farmers Database shall be useful for various activities like issuing soil health cards, dissemination of crop advisories to the farmers, precision farming, smart cards for farmers to facilitate e-governance, crop insurance, settlement of compensation- claims, grant of agricultural subsidies, community/village resource centres etc.

○ **Soil health card scheme:** It is meant to give each farmer soil nutrient status of his/her holding and advice him/her on the dosage of fertilizers and also the needed soil amendments Data will be developed for diagnostic soil analysis and deficient fields in each district. Nutrient recommendations will be prepared for Kharif and rabi crops.

○ **National Guidelines for Data Quality in Surveys**: These guidelines are released to provide comprehensive guiding principles and best practices for mitigating errors and biases that may occur during designing the project, conducting the surveys and analysing the responses. The initiatives for the guidelines came from the **National Data Quality Forum (NDQF)** housed at the ICMR.

Significance of data in agriculture

○ **Easy access to required information:** Farmers, scientists, research centres and governments have always been recording data relevant for their work, e.g. crops yields, water usage, fertilizer and pesticide applications, input costs, market prices
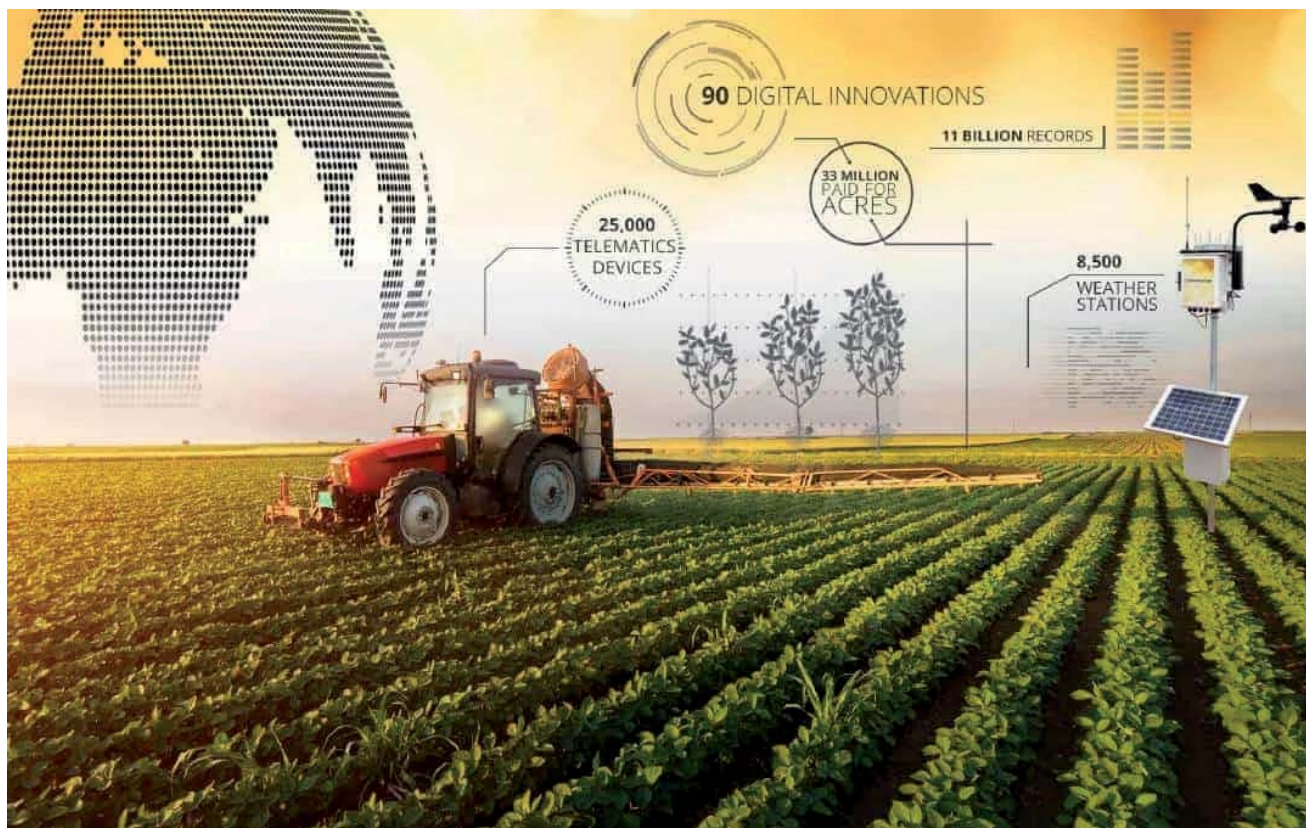
and major weather events. Farmers need accurate weather forecasts and accurate information on the inputs they can use.

◎ **Protection:** Optimising input factors (e.g., nutrients, irrigation, and pest control) can help protect natural resources.

◎ **Better output:** The use of granular data (for example, data for every 100 meter square of a field) and analytical capability to integrate various sources of information (such as weather, soil, and market prices) will help in increasing crop yield and optimising resource usage, lowering cost.

◎ **Easy yield predication:** Digital tools and data analytics are contributing towards efficient plant breeding with new variety development, crop selection, disease and pest prediction leading to yield predictions.

  ► Other platforms available on internet or mobile phones use weather data and imagery for precision or smart agriculture that can localize and reduce pesticide and fertilizer application and improve yield predictions.

◎ **Enhanced sustainability:** Data driven, contained and precise use of chemicals, not only improves farm profits but also sustainability.

Future prospects

◎ The challenges and opportunities of data is immense in a country like India with 638,000 villages and 130 million farmers speaking around 800 languages with 140 million hectares of cultivable land under 127 agro climatic regions capable of supporting 3,000 different crops and one million varieties.

◎ Data based decisions at the farm level can improve resource utilization and conservation practices. Similar efforts at regional level, tracking inputs per kilogram of produce or impact of production on natural resources can contribute towards long term policies for land and water conservation Proliferation of data offers unprecedented opportunities to understand consumer needs and preferences of farmers and to deliver tailored services and products for organisations that can make sense of this data.

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INVESTIGATIVE JOURNALISM AND ELEMENTS OF ETHICS

CONTEXT:

The 2021 Nobel Peace Prize was awarded to journalists Maria Ressa of the Philippines and Dmitry Muratov of Russia.

◉ BACKGROUND

- This prize awarding stretches the focus on the deteriorating situation of democracy. Democracy is at risk in many parts of the world. Autocracy is back in vogue. Unprecedented wealth is accumulating in ever fewer hands.

- Trillions have gone missing offshore. Even in mature democracies, the restraint on power is often alarmingly feeble.

- Thus, it becomes for the Governments globally to keep the powerful honest, and the honest powerful.

Therefore, investigative journalism can be the solution.

How investigative journalism can be considered as a 'Public Service'?

- Exposes corruption at the level of the government
  - Reveals abuse of official power
  - Brings out the denial and delay of justice
  - Questions the official facts and figures
  - Shows how laws are violated and circumvented
  - Discloses cover-ups
  - Identifies shameful societal practices

Major Principles of Ethical Journalisms

Ethical journalists should seek truth and report it

- The saying 'honesty is the best policy', and this stands particularly true in journalism.

- Ethical journalism should be accurate and fair. Journalists should be honest and courageous in gathering, reporting and interpreting information.

- A consistent theme throughout this principle is that journalists can practice ethical journalism by ensuring that the information they are reporting is accurate and truthful.

- They can do this by using original sources when available and verifying information as they go. Furthermore, journalists should never plagiarise but always credit their sources.

- Journalists should clearly identify their sources — ensuring that they are reliable and have no hidden motives.

- Moreover, journalists should take a source's motives into account before promising anonymity. Sources should only remain anonymous if they face danger, retribution or harm as a result of coming forward with information.

Ethical journalism minimizes harm

- This pillar of ethical journalism highlights the importance of respect. "Ethical journalism treats sources, subjects, colleagues and members of the public as human beings deserving of respect."

- Exercising compassion is one of the key themes under this principle. Journalists should strike a balance between the public's need for information, while remaining aware of any possible discomfort or harm this information may cause them.

- This compassion should be extended to the groups that may be affected by your reporting, such as minors or victims of sexual abuse. Additionally, awareness and sensitivity towards different cultures when covering a story is key.

- Sensitivity in this regard is important because you never know how a story may affect the person reading it; you want to avoid triggering your audience.

- Another theme in this pillar is consent. Journalists need to be aware that civilians may not be as inclined to share personal information like public figures would.

- Journalists should exercise caution regarding the details they share with the public, as content that is published is permanent and will accumulate a significant reach with time.

Ethical journalists act independently

- This pillar is centred on journalists avoiding special treatments or gifts given in an effort to sway reporting. This helps to avoid biased reporting.

- To remain ethical, journalists should decline gifts, favours and any special treatment that they may be offered as this will "compromise integrity or impartiality, or may damage credibility."

- In the same breath, they should also avoid giving information in exchange for money or favours.

Be accountable and transparent

- This pillar of ethical journalism is all about being accountable for yourself and your work, as well as remaining transparent in your reporting.

- It is crucial to "take responsibility for one's work and explain one's decisions to the public."

- This pillar could be considered the core of ethical journalism because if you are being accountable and transparent, you are unlikely to act unethically in other aspects of your career.

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SECTION: B
(PRELIMS)

CURRENT AFFAIRS

THE NEED TO USE INDIA'S HISTORIC WATER MANAGEMENT SYSTEMS

⊙ **CONTEXT:**   Huge architectural gems built deep into the Earth like inverted fortresses are scattered around India – and restoring them may be a solution to help the country's parched communities.

What are Stepwells?

- Evidence of stepwells dates back to the Indus Valley Civilisation between 2500-1700 BC.

- Initially constructed as crude trenches, they slowly evolved into engineering marvels between 11th-15th Century.

- In 2016, Stepwell Atlas, mapped the coordinates of around 3,000 existing stepwells in India.

- Delhi, the capital, alone has 32 stepwells.

- Stepwells are multi-storied subterranean structures with significant ornamental and architectural features. They usually have two parts:

  ⊙ a vertical shaft of water

  ⊙ the cascading galleries, chambers and a flight of orchestrated steps

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Water extraction in India

- According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), India is the world's largest extractor of groundwater.

- The groundwater level in India is estimated to have declined by 61% between 2007 and 2017.

- The depletion of this vital resource not only threatens people's access to drinking water but also food security by resulting in a reduction in food crops by up to 68% in severely-hit regions.

Rainfall in India

- India receives about 400 million hectare metres of rain annually, but nearly 70% of surface water is unfit for human consumption due to pollution.

- India is ranked 120th out of 122 countries in the water quality index.

- An estimated 200,000 people die every year due to inadequate water.

How Rajasthan is ahead in water conservation?

- In 2018, the government of Rajasthan drew up a comprehensive framework, with technical assistance from the **World Bank**, for restoration of the stepwells, including **Chand Bawri.**

- The Rajasthan government, through its flagship program **Mukhyamantri Jal Swavalamban Abhiyan**, has taken initiatives to make villages self-sufficient in water by reviving the non-functional rainwater harvesting structures.

Chand Bawri in Abhaneri, Rajasthan

- Chand Bawri is India's largest and deepest stepwell.

- It is an exquisitely carved maze of 3,500 steps, arranged in perfect symmetry, descends with geometrical precision to reach a well.

  ► On third side, criss-crossed steps encircle the water on three sides.

> ► The fourth side is adorned by a pavilion with embellished galleries and balconies.

- **Built by:** Rajput ruler Raja Chanda during the 8th-9th Century.
- Extending down 13 floors, or 100ft (30m), into the ground, it is a captivating example of inverted architecture.

DR. ABDUL QADEER KHAN, FATHER OF PAKISTAN BOMB DIES

⊙ **CONTEXT:**   Dr. Abdul Qadeer Khan, who died recently, was revered in Pakistan as the "father" of the country's "atom bomb".

About Dr. Abdul Qadeer Khan

- In 1975, Khan, working in Holland at a uranium enrichment center as a German-Dutch translator, presented his duties to then-Prime Minister Zulfikar Ali Bhutto, who wanted Pakistan to have its own nuclear program.
  - ⊚ It provided Pakistan's first centrifuge plans, which set them on the path to uranium enrichment.
- In 1976, he joined the Pakistan Atomic Energy Commission's nuclear weapons program.
- He is revered in Pakistan as the **"father"** of the "atomic bomb" or Nuclear Hero.
- He was convicted by a Dutch court of theft.
- Also, he smuggled nuclear secrets into provinces including **North Korea, Iran and Libya.**
  - ⊚ For this, he was arrested and placed in a house arrest.
- Due to his contribution, by **1998, Pakistan** had conducted its **first nuclear tests.**
- Pakistan honored him with **Nishan-e-Imtiaz titles (Order of Excellence, highest honor in Pakistan)** and **Mohsin-e Pakistan (Provider of Pakistan).**

About India's Nuclear Tests and Nuclear Doctrine

- In 1965, India and the NAM countries proposed specific measures to prevent the proliferation of nuclear weapons at the UN Arms Commission. These are:

  ⊙ Not to pass on Nuclear technology to others

  ⊙ There is no use of nuclear weapons against non-nuclear powers

  ⊙ UN protection in non-nuclear countries

  ⊙ Prohibition of nuclear weapons in a nuclear test

- **In May 1974**, India conducted its first nuclear test in **Pokhran** with the name **"Smiling Buddha".**

- **In 1998,** five nuclear tests were performed as part of the **Pokhran-II series.**

  ⊙ These tests were collectively called **Operation Shakti.**

- **In 2003,** India adopted its Nuclear Doctrine of **'No First Use'** i.e. India will use nuclear weapons only in retaliation against a nuclear attack on its Territory.

- India has an estimated **156 nuclear weapons** at the beginning of 2021 compared to 150 at the beginning of last year, while Pakistan has 165 **nuclear weapons**, up from 160 by 2020 **(SIPRI Yearbook 2021).**

  ⊙ **Pakistan has not stated a policy of "first use"** and little is known about its nuclear program.

IEA INVITES INDIA TO BECOME FULL-TIME MEMBER

⊙ **CONTEXT:**   **International Energy Agency (IEA)** has invited India, **the world's third-largest energy consumer**, to become its **full-time member** - a proposal if accepted will require New Delhi to raise strategic **oil reserves to 90 days requirement.**

About the International Energy Agency

- The International Energy Agency is an **autonomous Intergovernmental Organisation.**

- The IEA was established in **1974** by developed countries - under the auspices of the **Organization for Economic Co-operation and Development (OECD)** - in response to the oil embargo.

- **IEA** is made up of **30 member countries** and **eight associate nations.** Four countries are seeking accession to **full membership** - **Chile, Colombia, Israel and Lithuania.**

  ⊙ **India** became an **Associate member** of IEA in **March 2017** but it was in engagement with IEA long before its association with the organization.

- **The World Energy Outlook report** is released by the IEA annually.

- Its purpose is guided by **four main areas** of focus:

  ⊙ Energy security

  ⊙ Economic development

  ⊙ Environmental awareness

  ⊙ Global engagement

Roles and responsibilities

- It was founded in the wake of the **1973-1974 oil crisis** to help its members respond to the massive disruption of the oil supply, a role that continues to be fulfilled today.

- The IEA mandate has expanded over time to include monitoring and analyzing global energy trends, promoting sound energy policy, and promoting international technology cooperation.

What if India becomes its member?

- Countries that want to become members of the IEA must also be members of the OECD and hold 90 days of oil importation as commercial stocks.

  - The proposal, if approved, will require India to increase oil shares within 90 days.

  - Current strategic oil reserves equal to 9.5 days of its need.

WORLD MENTAL HEALTH DAY 2021

- **CONTEXT:** World Mental Health Day is observed on 10 October each year, with the full aim of raising awareness on mental health issues and program support for programs related to mental health and well-being.

About the Day

- The **World Federation for Mental Health launched the World Mental Health Day** on **October 10, 1992**.

- **Objective:** To raise awareness of mental health issues around the world and to mobilize efforts in support of mental health.

- The **motto** of the **WHO** World Health Day 2021 campaign is **"Mental health care for all: let's make it reality".**

- The **theme** for **World Mental Health Day 2021** is **'Mental Health in an Unequal World'.**

What is mental illness?

- Mental illness has two categories - those with any mental illness (AMI) and those with serious mental illness (SMI), although these are not the same.

  - **AMI:** AMI is defined by the Substance Abuse and Mental Health Services Association (SAMHSA) as any mental, emotional or behavioral disorder experienced by the Diagnostic and Statistical Manual of Mental Disorders.

  - **SMI:** A person with AMI is defined as SMI by SAMHSA if his or her disruption severely disrupts or limits one or more of life's activities.

How common is mental illness?

- **970 million people worldwide** have a mental illness or substance abuse problem. (Data, 2018)

- Anxiety is the world's most common mental illness, affecting **284 million people**. (Data, 2018)

- Globally, mental illness affects more **women (11.9%)** than **men (9.3%)**. (Data, 2018)

India's scenario

- With the current closure and radical lifestyle changes, a recent mental health survey of 43% of Indians is currently suffering from depression and is learning to deal with it.
- 26 percent of Indians suffer from mild depression, and 17 percent suffer from severe depression.
- It is about noting that 6% of Indians are very depressed.

Government initiatives for mental health

- National Mental Health Programme (NMHP), 1982
- Mental Health Care Act, 2017

LOK ADALAT HAS NO JURISDICTION TO DECIDE A MATTER ON MERITS: SUPREME COURT

⊙ **CONTEXT:**

The Supreme Court noted that Lok Adalat has no jurisdiction over the matter once it has been determined that a compromise or settlement cannot be reached between the parties.

What are Lok Adalats?

- Lok Adalat is one of the alternative dispute redressal mechanisms. Simply put, it is one way to resolve differences.
- It is a forum where disputes/cases pending in a court of law or pre-trial stage are resolved peacefully.
- Lok Adalats has been granted legal status under the **Legal Services Act, 1987.**
- Under the said Act, the award (decision) made by Lok Adalats is deemed to be a decision of a public court and is final and binding on all parties and there is no appeal against that award before any court of law.

What types of cases have been handled in Lok Adalats?

- Mutation of land cases
- Compoundable criminal offences
- Family disputes
- Encroachment on forest lands
- Land acquisition disputes
- Motor accident claim
- Cases which are not sub-judice

Key-points highlighted by SC

- The Supreme Court stated that the provisions of the Legal Services Authorities Act, 1987 make it clear that the power of Lok Adalat will be to clarify and reach an agreement or settle between the parties to a dispute.
- It said that if the payment or agreement failed, Lok Adalat should return the case to the court where the indictment was found.

NATIONAL GREEN TRIBUNAL CAN TAKE UP ENVIRONMENTAL ISSUES ON ITS OWN: SC

⊙ **CONTEXT:**   In a latest development, Supreme Court declared the National Green Tribunal's (NGT) position as a "unique" forum endowed with suo motu (on its own motion) powers to take up environmental issues across the country.

About National Green National Council

- It is a special body established under the **National Green Tribunal Act (2010).**
- **Aim:** To effectively and expeditiously deal with cases related to environmental protection and conservation of forests and other natural resources.
- NGT Act provides for special jurisdiction in court to deal with disputes arising under a set of **seven rules (mentioned in Schedule I of the Act)** -
  - ⊚ Water Act
  - ⊚ Wild Life (Protection) Act 1972
  - ⊚ Forest (Conservation) Act 1980
  - ⊚ Public Liability Insurance Act 1991
  - ⊚ Biological Diversity Act 2002
  - ⊚ National Green Tribunal Act 2010
- NGT has five residences, New Delhi is the principal place of sitting.
- Bhopal, Pune, Kolkata and Chennai are four others.

Composition

- The Tribunal is headed by **the Chairperson** who sits in the Principal Bench and has at least ten but **not more than twenty judicial members** and at least ten **but not more than twenty expert members.**
- NGT is authorized to file a dismissal of applications or complaints within six months of filing the same.
- The decisions of the Tribunal are binding.
- The Tribunal has the power to review its decisions. If this fails, the decision may be challenged in the High Court within 90 days.

Special environmental court

- With the establishment of the NGT, **India became the third country** in the world to establish a special environmental court, only after **Australia and New Zealand,** with the first developing country to do so.

Key-Highlights of the Judgment

- **Not Limit to role reduction:** The Tribunal must play equally important roles for prevention, recreational or natural remediation.
  - ⊚ The functional capacity of the NGT is intended to leverage wide powers to do full justice in its environmental mandate.
  - ⊚ **Article 21** rights cannot stand on a small translation campus.
  - ⊚ Article 21 of the Constitution protects the right to life and personal freedom.
- **Multidisciplinary Role:** NGT, as a forum of recommendation, competent, and specialized, to address all environmental issues such as the original and as an appeal authority.

- **International Commitment:** NGT contains an international obligation that India owes to the environment.

- NGT has been recognized as one of the **most progressive tribunals** in the world.

  - This jurisprudential leap has allowed India to enter a rather exclusive group of nations which have set up such institutions with broad powers.

NEPALI CONGRESS DELEGATION VISITING INDIA AGAINST HIGHLIGHTS THE KALAPANI ISSUE

◉ **CONTEXT:**   Nepal signals to solve the territorial dispute over Kalapani through dialogue.

About Kalapani

- The Kalapani region gets its name from the Kali River.

- It is located on the eastern corner of Uttarakhand district of **Pithoragarh.**

- Share the northern border with the Tibetan Autonomous Region of China and Nepal east and south.

- It is wedged in between **Limpiyadhura, Lipulekh and Kalapani.**

- The area is a major regional dispute between Nepal and India covering at least **37,000 hectares** of land in the High Himalayas.

Indo-Nepal border issues

- The Indo-Nepal border was originally delineated by the 1816 Sugauli Treaty.

- The treaty established the **Kali River (Sharda, Mahakali)** as a border, with the area east of the river going to Nepal.

- **Nepal's stand:** Nepal's stance is that the river originates from a stream northwest of Lipulekh, which brings Kalapani, linpiyaxle, and lipulekh to its territory.

- **India's stand:** India's stance is that the river originates in springs beneath Lipulekh, and hence this area falls within Pithoragarh district in the state of Uttarakhand, India.

- Both sides have maps of the British period to claim their position.

A CLEAN, HEALTHY AND SUSTAINABLE ENVIRONMENT IS A 'UNIVERSAL RIGHT': UNHRC

⊙ **CONTEXT:** The UN Human Rights Council (UNHRC) has recognized access to a clean and healthy environment as a 'fundamental right' in Geneva, Switzerland.

What is 'right to clean environment'?

- The right to a clean environment was centered on the **Stockholm Declaration** of 1972.
  - ⊙ The Declaration emphasizes the "right to life, liberty and security of person, and the protection of human rights and fundamental freedoms".
- Fifty years later, the declaration has been legally recognized.

> The **World Health Organization** estimates that 13.7 million deaths a year, or about 24.3% of the global total are due to natural disasters such as air pollution and chemical exposure.

Environmental Management in India

- **Article 21** of the Constitution of India states: 'No one shall be arbitrarily deprived of his nationality nor denied the right to change his nationality.
- The Indian Parliament has enacted a number of laws to protect and improve the environment.
  - ⊙ Wildlife (protection) Act, 1972
  - ⊙ Water (prevention and control of pollution) Act, 1974
  - ⊙ The forest (conservation) Act, 1989
  - ⊙ The air (prevention and control of pollution) Act,1981
  - ⊙ The Environment (protection) Act, 1986
- In addition the Constitution (forty-two amendments) of the Act, 1976 included two important provisions namely.
  - ⊙ Article 48-A
  - ⊙ Article 51A (g)
- Thus, making the Constitution of India the first in the world to provide a constitutional framework for environmental protection.

NEW CICADA VARIETIES: NAGALAND

⊙ **CONTEXT:** Recently, a new species of cicada (Platyomia kohimaensis) was discovered in Naga Hills, Nagaland.

About cicada species

- Cicadas are hemipteran insects known for their loud, complex and species-specific acoustic signals or songs.
  - ⊙ Hemipteran insects, also called true bugs, have mouthparts used for piercing and sucking and have two pairs of wings.

- The new species of cicada belong to the Platylomia radha group described in the Naga Hills east of the Himalayas.

- These species have been found near the village of Mitelphe in the Kohima region.

- It is a dusk singing, large-sized cicada that calls for a short window during the evening twilight hours.

- It timbalises in the form of a continuous and regular cackling.

  ⊙ Timbal is a membrane that produces sound for various insects.

Habitat

- Most cicadas are canopy dwellers and are found in natural forests with large trees.

- The typical variety of cicadas in India and Bangladesh is ranked high in the world, followed by China.

Threat

- Large-scale clearing of natural forest land into human settlement and agricultural fields, along with burning of forests is behind the shrinking distribution of Cicada.

- Considered as a delicacy and fetching at a good price, its uncontrollable photography and killing during its massive emergence poses a serious threat to its survival.

COVAXIN GETS APPROVAL BY DGCI FOR KIDS IN 2-18 AGE GROUP

⊙ **CONTEXT:** In a significant development, **Bharat Biotech's** COVID-19 vaccine, Covaxin, got **DGCI's approval for usage on kids aged 2-18.**

Important facts about Covaxin

- Covaxin, India's indigenous COVID-19 vaccine by Bharat Biotech is developed in collaboration with the **Indian Council of Medical Research (ICMR) - National Institute of Virology (NIV).**

- The indigenous, inactivated vaccine is developed and manufactured in **Bharat Biotech's BSL-3 (Bio-Safety Level 3)** high containment facility.

- The vaccine is developed using **Whole-Virion Inactivated Vero Cell** derived platform technology.

  ⊙ **Inactivated vaccines** do not replicate and are therefore unlikely to revert and cause pathological effects.

    ➤ They contain dead virus, incapable of infecting people but still able to instruct the immune system to mount a defensive reaction against an infection.

- The World Health Organization (WHO) is yet to grant emergency use authorisation to Covaxin.

> **What is Vaccine?**
> - A vaccine works by mimicking a natural infection.
> - A vaccine not only induces **immune response** to protect people from any future COVID-19 infection, but also helps quickly build herd immunity to put an end to the pandemic.

- **Herd immunity** occurs when a sufficient percentage of a population becomes immune to a disease, making the spread of disease from person to person unlikely.

Types of Vaccine

- There are broadly four types of vaccine —

  ➤ **Whole virus vaccine:** A vaccine based on the whole virus (this could be either inactivated, or an attenuated [weakened] virus vaccine)

  ➤ **Non-replicating viral vector vaccine:** A non-replicating viral vector vaccine that uses a benign virus as vector that carries the antigen of SARS-CoV

  ➤ **Nucleic-acid vaccines**: Nucleic-acid vaccines that have genetic material like DNA and RNA of antigens like spike protein given to a person, helping human cells decode genetic material and produce the vaccine;

  ➤ **Protein subunit vaccine:** Protein subunit vaccine wherein the recombinant proteins of SARS-COV-2 along with an adjuvant (booster) is given as a vaccine.

C-DOT TO START 6G TECHNOLOGY

⊙ **CONTEXT:**   Recently, the government asked the Center for the Development of Telematics (C-DOT) to start developing 6G and other future technologies to capture the global market in time.

What is 6G technology?

- 6G (sixth generation wireless) is a successor of 5G mobile technology.

- It will be able to use higher frequencies than 5G networks and provide much higher power and much lower latency (delay).

- One of the goals of the 6G internet will be to support **single microsecond-latency connections** (one microsecond delay in communication).

  ◉ This speed of 1,000 times - or 1 / 1000th the latency - is more than one millisecond.

- It seeks to utilise the terahertz band of the frequency that is not currently in use.

  ◉ Terahertz waves fall between infrared waves and microwaves into an electric spectrum.

- ◉ These waves are tiny and fragile, but there is a large amount of free spectrum at the top which can allow for amazing data levels.

Progress in 6G

- **Samsung, Huawei, LG** and other companies have started working on 6G technology.
  - ◉ Next-generation telecommunications (6G) technology is said to be 50 times faster than 5G and is expected to be introduced commercially between **2028-2030.**

Current status of India's telecom sector

- The Department of Communications has embarked on the process of launching 5G commercials in India.
  - ◉ It has sought TRAI's views on the base price of spectrum to be allocated for 5G services.
- 5G technology is expected to deliver downloads **ten times** faster than 4G and up to three times the efficiency of spectrum.
  - ◉ **5G** high data download speeds are set at **20 gigabit per second (Gbps)**.
- **The Telecom Regulatory Authority of India (Trai)** has recorded high-speed 4G speeds of about 20 megabit per second (Mbps) on the **Reliance Jio network** in the country.

> ### Centre for Development of Telematics (C-DOT)
> - It was founded in **1984.**
> - It is an independent Telecom **R&D (Research and Development)** center of DoT (Department of Telecom), Ministry of Communications.
> - It is a registered community under **the Society Registration Act, 1860.**
> - A registered government-funded institution consisting of the **Department of Science and Industry (DSIR),** the Department of Science and Technology.
> - Currently, C-DOT is working to achieve the goal of various Govt programs. of India including **Digital India, BharatNet, Smart Cities etc.**
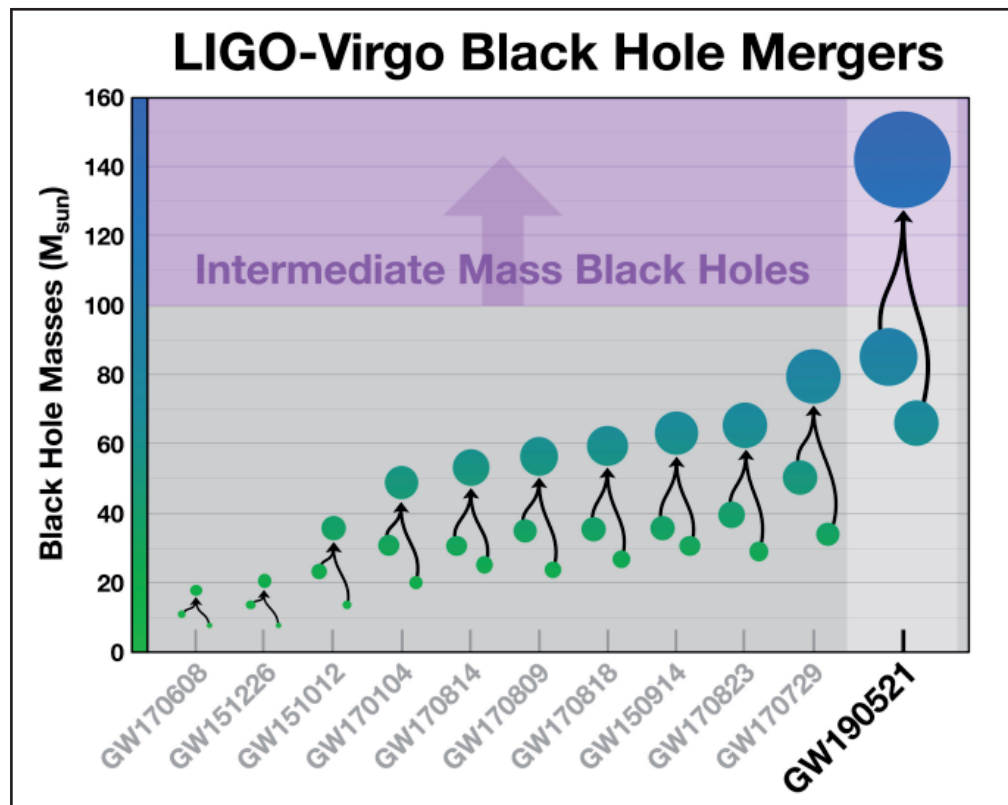
INTERMEDIATE-MASS BLACK HOLE

- ◉ **CONTEXT:** Scientists from the Chennai Mathematical Institute and Ors. analyzed data from LIGO-VIRGO viewing centers and rated the fraction of Black Hole binary integration found so far demonstrating the potential for Intermediate-Mass Black Holes.

About Black Hole Merger

- It is the practice of merging two or more black holes.
  - ◉ Indian scientists have already identified the combination of three large black holes.
- The combination of two or more black holes results in different types of black holes. For eg, **Intermediate-Mass Black Holes** and **Binary Black Holes.**
  - ◉ **The Intermediate-Mass black hole (IMBH)** is a section of black hole weighing in the **range 102-105** of the solar masses: much larger than the black holes but under the higher black holes.

- One of the theories of intermediate mass black hole formation has to do with **'hierarchical growth'.**

- That is, if the black holes exist among a dense cluster of stars, the remnant (black hole) of a merger can pair up with another black hole close by to form a binary. This can eventually merge to form a second remnant which is more massive. This process, happening in a hierarchical manner, can explain intermediate mass black hole formation.

- **Gravitational Waves (GW)** are created when two black holes rotate and merge.

LIGO-Virgo Black Hole Mergers

Intermediate Mass Black Holes

Black Hole Masses (M_{sun})

GW170608 GW151226 GW151012 GW170104 GW170814 GW170809 GW170818 GW150914 GW170823 GW170729 GW190521

Kick at the merger

- "Kick" is the opposite pressure received by a black hole left during a merger.

- It is a response to Gravitational Waves that removes equal energy and momentum during the merger.

- These kicks can be quite large, giving it speeds of up to **1000 kilometres per second.**

- If this kick velocity is above the escape velocity of the star cluster in which the black hole is formed, it escapes from the environment and moves out. This hinders further hierarchical mergers.

- The extent of kicks received by the remnant can be calculated from the masses of black joint holes and their rotation. The kick estimates help understand which mergers have the possibility of forming **Intermediate-Mass black holes.**

Black hole

- Dark holes occur when a giant star is attacked by a supernova towards the end of its lifetime. A black hole builds from the remains of the explosion..

- A point is made in the space where the matter is pressed to create a field of gravity where light does not escape.

- The concept was taught by **Albert Einstein in 1915** and the term **'black hole'** was coined by **John Archibald Wheeler.**
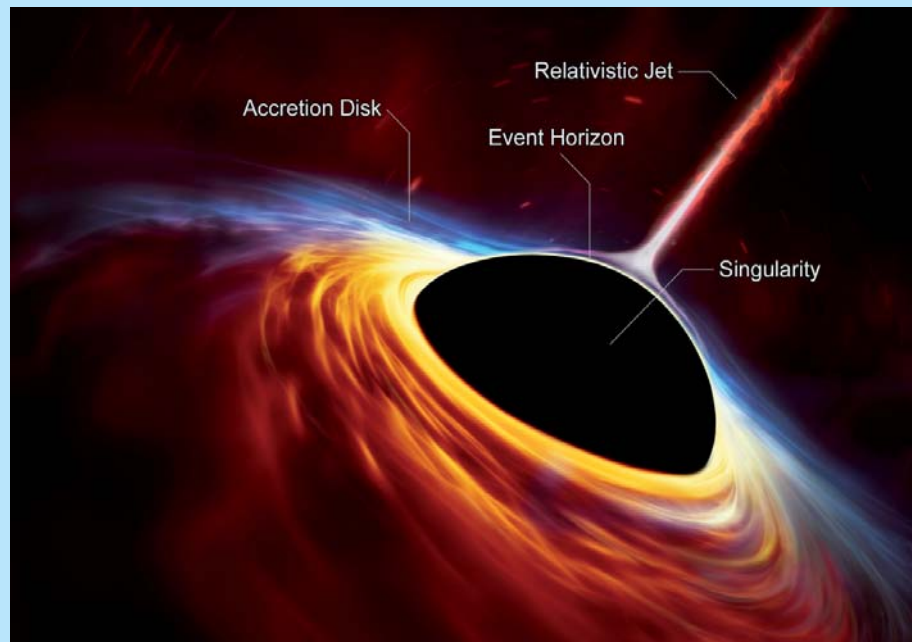
The black holes are usually in two categories

- **One section of the Stellar black holes** is between a few solar cells and dozens of solar cells. This is thought to have been formed by the death of giant stars.

- **One section has very large black holes.** This ranges from hundreds of thousands to millions of times the Sun from our Solar system. These are thought to be formed when two or more black holes meet.

  ➤ In April 2019, scientists at the Event Horizon Telescope Project released the first image of the Black Hole.

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- ☑ **GS Paper 2**
- ☑ **GS Paper 3**

TEST SERIES

- ☑ **Prelims Test Series**
- ☑ **GS Mains Test Series**
- ☑ **Essay Test Series**
- ☑ **Ethics Test Series**
- ☑ **Optional Test Series**
  - ◉ **Political Science**
  - ◉ **Geography**
  - ◉ **History**
  - ◉ **Public Administration**
  - ◉ **Anthropology**
  - ◉ **LAW**

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CSE RESULTS

TOP 100 ALL INDIA RANKING CSE 2020

8, 9, 12, 13, 14, 16, 17, 19, 20
24, 26, 28, 30, 31, 36, 38, 41, 45, 50
51, 52, 55, 56, 58, 59, 67, 68, 70, 71, 73
74, 76, 78, 83, 84, 85, 86, 89, 93, 98, 100
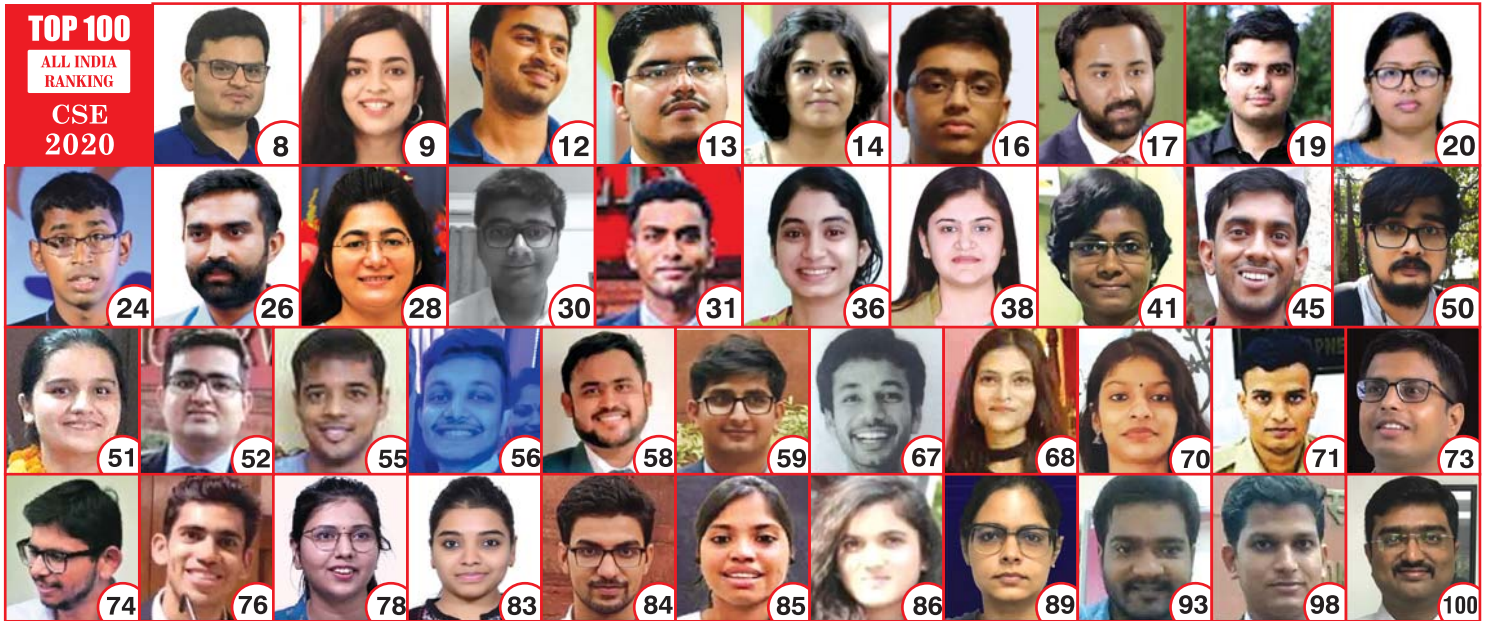
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TOP 100 ALL INDIA RANKING CSE 2019

3, 6, 10, 11, 16, 17, 21, 22, 28
30, 33, 38, 39, 42, 44, 46, 53, 54, 59, 66, 69
70, 72, 77, 78, 80, 82, 84, 86, 87, 94, 97, 98

TOP 100 ALL INDIA RANKING CSE 2018

2, 3, 5, 7, 27, 36, 37, 40, 44, 49
51, 52, 56, 58, 62, 74, 81, 89, 92, 94, 98, 100

TOP 100 ALL INDIA RANKING CSE 2017

3, 10, 19, 31, 33, 35, 40, 41, 44, 45, 48
54, 57, 63, 64, 68, 71, 75, 77, 80, 83, 93, 97, 100