



drishti

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Polity and Governance

Highlights

- School Education Quality Index: NITI Aayog
- 14th Anniversary of Right To Information Act
- Swachh Bharat Diwas 2019
- Centralized Public Grievance Redress and Monitoring System
- Performance Smart-Board
- Commutation of Death Sentence
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School Education Quality Index: NITI Aayog

National Institution for Transforming India (NITI Aayog) has released the first edition of the School Education Quality Index (SEQI).

- SEQI has been **developed by NITI Aayog** to evaluate the **performance of States and Union Territories (UTs) in the school education sector**.
- It is developed through a collaborative process of the Ministry of Human Resource Development (MHRD), **the World Bank and sector experts**.

School Education Quality Index

- SEQI is based on a **set of 30 critical indicators** that measure the overall effectiveness, quality, and efficiency of the Indian school education system.
- It aims to **institutionalise a focus on enhancing education outcomes** by driving improvements in **learning levels, access, equity, infrastructure, and governance** processes.
- To facilitate like-to-like comparisons, States and UTs have been grouped as **Large States, Small States and Union Territories** for ranking purpose.
- Performance of the States:
 - Among **20 Large States**, Kerala was ranked **first** for overall performance on the quality of school education while **Uttar Pradesh** came **last**.
 - However, Haryana, Assam and Uttar Pradesh showed the most improvement.
 - Among **Smaller States**, Manipur emerged as the **best performer**, while **Chandigarh topped the list of Union Territories**.

Summary of Index Categories and Domains			
Category	Domain	Number of indicators	Total weight
1. Outcomes	1. Learning Outcomes	3	360
	2. Access Outcomes	3	100
	3. Infrastructure and Facilities for Outcomes	3	25
	4. Equity Outcomes	7	200
2. Governance Processes Aiding Outcomes	Covering student and teacher attendance, teacher availability, administrative adequacy, training, accountability, and transparency	14	280
Total		30	965

- It is to be noted that **all seven UTs have shown an improvement** in their performance.
- **West Bengal refused to participate in the evaluation process** and has not been included in the rankings.
- How the Index will Help States?
 - It recognises school education as a subject mentioned in the Concurrent List and that State-level leadership is crucial for improving outcomes in a cost-effective manner.
 - It will foster the spirit of **competitive and cooperative** federalism, as the index strives to facilitate the sharing of knowledge and best practices across States and UTs.

Note:



NITI Aayog

- The National Institution for Transforming India, also called NITI Aayog, was formed via a resolution of the Union Cabinet on 1st January 2015.
- The Government of India constituted the NITI Aayog to replace the Planning Commission instituted in 1950.
- It is the premier policy 'Think Tank' of the Government of India, providing both directional and policy inputs.
- While designing strategic and long term policies and programmes for the Government of India, NITI Aayog also provides relevant technical advice to the Centre and States.
- The Governing Council of NITI, with the Prime Minister as its Chairman, comprises of Chief Ministers of all States and Lt. Governors of Union Territories (UTs).

14th Anniversary of Right To Information Act

An important instrument of participatory democracy 'Right To Information (RTI)' Act, 2005 marked its 14th anniversary on 12th October 2019.

- To mark the occasion, the 'Report Card on the Performance of Information Commissions in India' has been released by the NGOs – Satark Nagrik Sangathan and the Centre for Equity Studies.

Key Findings➤ **Achievements**

- RTI is one of the landmark acts which has led to a **significant boost in accountability of the government towards the people.**
 - It has given ordinary citizens the confidence and the right to ask questions to the government authorities.
 - It assured information accessibility at every level of public governance.
- RTI ensured the **maintenance and publication of public records.**
- Nearly 60 lakh applications are being filed every year.
- Recently, the government of Rajasthan has launched [Jan Sochna Portal \(JSP\)](#), on the lines of [Right to Information Act](#).

➤ **Challenges**

- Government officials face hardly any punishment for violating the law by denying applicants legitimate information.
 - Central and State Information Commissions, which are the courts of appeal under the RTI Act, **failed to impose penalties in about 97% of the cases** where violations took place.
 - The State Commissions of **Tamil Nadu, Sikkim, Mizoram and Tripura** did not impose penalties in any cases at all.
- The commissions also have the **power to recommend disciplinary action against officials for persistent violations** of the RTI Act. **Only 10 states invoked these powers.**
- Many Information Commissions are **non-functional or are functioning at reduced capacity** as the posts of commissioners, including that of the Chief Information Commissioner are vacant.
 - The State Information Commission (SIC) of the state of Andhra Pradesh is yet to become functional.
 - The State Information Commission of West Bengal is currently functioning with just two commissioners.
- The central, as well as state commissions, have an **increasing workload**, which is leading to **huge pendency of cases.**
 - Any new appeal to the Central Information Commission (CIC) would have to wait for more than one-and-a-half years for resolution.

Right to Information Act 2005

- Enacted by the Parliament, it received the President's assent on **15th June, 2005.**
- Under the provisions of the Act, a citizen **may request information from a "public authority" (a body of government)**, which is required to reply **within thirty days.**

Central Information Commission

- CIC was **established in 2005** by the Central Government under the provisions of Right to Information (RTI) Act, 2005.
- The Chief Information Commissioner heads the Central Information Commission.

Note:

- It hears appeals from information-seekers who have not been satisfied by the public authority and also addresses major issues concerning the RTI Act.
- CIC submits an **annual report to the Union government** on the implementation of the provisions of RTI Act.

State Information Commission

- The Right to Information Act of 2005 provides for the creation of a State Information Commission at the state level.
- The State Information Commission is a high powered independent body which inter-alia looks into the complaints made to it and decide the appeals.
- It entertains complaints and appeals pertaining to offices, financial institutions, public sector undertakings, etc. **under the concerned state government.**
- The Commission consists of a State Chief Information Commissioner and not more than **ten State Information Commissioners** appointed by the Governor.

Swachh Bharat Diwas 2019

- The Prime Minister inaugurated the **Swachh Bharat Diwas 2019** on the occasion of the **Mahatma's 150th birth anniversary** in Ahmedabad, Gujarat.
 - The event has been made more memorable after the **UN released a postal stamp on Gandhiji** a few days back.
- On the same occasion, Prime Minister of India proposed the **"Einstein Challenge"** as a tribute to Mahatma Gandhi.
 - Albert Einstein's famous words on Gandhi says that "Generations to come will scarce believe that such a one as this ever in flesh and blood walked upon this earth."
 - Considering the above statement Einstein Challenge invites thinkers, entrepreneurs, and tech leaders to be at the forefront of **spreading Gandhi's ideas through innovation** to make it reach future generations.
- On the occasion of Swachh Bharat Divas 2019, the Ministry of Railways also released **Station Cleanliness Survey 2019.**

- **Rajasthan's Jaipur station topped** the list of **cleanest railway stations** in India – in the **non-suburban group** of stations.
- In the **suburban group** of stations, Maharashtra's **Andheri station has topped** the list.
- The **cleanest railway zone 2019** award has been given to the **North Western Railway Zone.**
- To mark the **same event** the Atal Innovation Mission (AIM), NITI Aayog's Atal Tinkering Labs (ATL) and United Nations Children's Fund (UNICEF) India has launched **'the Gandhian Challenge'**.
 - The contest – **open for every child** in India from **2nd October to 20th October** – also celebrates **70 years of partnership between the Government of India and UNICEF India** to enable **Every Right for Every Child.**
 - Ideas and solutions may be expressed through: Art & Innovation (Letters, poems, painting, videos, and photos, among others), and Science, Technology & Innovation (Robotics, Internet of Things (IoT), sensors and 3D printers, among others).

Atal Innovation Mission

- AIM is the NITI Aayog's initiative to promote a culture of innovation and entrepreneurship in the country.
- Six major initiatives of AIM:
 - **Atal Tinkering Labs (ATL)**- Creating a problem-solving mindset across schools in India.
 - **Atal Incubation Centers**- Fostering world-class start-ups and adding a new dimension to the incubator model.
 - **Atal New India Challenges**- Fostering product innovations and aligning them to the needs of various sectors/ministries.
 - **Mentor India Campaign**- A national Mentor network in collaboration with the public sector, corporates, and institutions, to support all the initiatives of the mission.
 - **Atal Community Innovation Center**- To stimulate community-centric innovation and ideas in the unserved /underserved regions of the country including Tier-2 and Tier-3 cities.
 - **ARISE**- To stimulate innovation and research in the MSME industry.

United Nations Children's Fund

- UNICEF is an **integral part of the United Nations**, which works with governments, communities, civil

Note:

society organizations, the private sector, and other partners worldwide to advance children's rights, and is guided by the **Convention on the Rights of the Child**.

- **Generation Unlimited** is a new UNICEF-led global partnership that aims to ensure that every young person in the age group of 10-24 yrs. is in some form of school, learning, training, self-employment, or age-appropriate employment by 2030.

Centralized Public Grievance Redress and Monitoring System

The Centralized Public Grievance Redress and Monitoring System (CPGRAMS) reforms have been launched in the Department of Posts.

- The reforms are expected to **reduce the grievance disposal time and improve the quality** of grievance redressal.
- CPGRAMS is an **online web-enabled** system developed by the **National Informatics Centre**, in association with the **Ministry of Personnel, Public Grievances & Pensions**.
 - It provides the facility to **lodge and track a grievance online from any geographical location**.
 - It also enables **Department of Administrative Reforms and Public Grievances (DARPG) to monitor the grievance**.
 - The procedure also includes designating a **senior officer as the Director of Grievances/Grievance officer in every office** to ensure that the system remains accessible, simple, quick, fair and responsive.

Performance Smart-Board

The **Ministry of Electronics and Information Technology (MeitY)** has launched an **automated real-time performance Smart-Board** to ensure effective monitoring of the key programmes of the Ministry.

- It is a **centralized, easy-to-access and single-window** platform for Centre, State or District specific projects implemented by **MeitY**. Eg. **Aadhar, Digital India, Digital Payments**, etc.
- It will provide **real-time, dynamic analytical** project monitoring for critical and high priority Programme/Schemes of MeitY which will ensure **transparency**.

Commutation of Death Sentence

Recently, the President of India has decided to **commute the death sentence** of an accused (convicted for the assassination of then Punjab Chief Minister) as a **humanitarian gesture** ahead of the **550th birth anniversary celebrations of the founder of Sikhism – Guru Nanak Dev Ji**.

- In the last **nine years**, the President **commuted at least 20 death sentences to life imprisonment**, based on the recommendations of the **Ministry of Home Affairs (MHA)**.

Constitutional Provision to Grant Pardon: Article 72

- **Article 72** of the Constitution **empowers the President to grant pardons** to persons who have been tried and convicted of any offence in all cases where the:
 - Punishment or sentence for an offence is **against a Union Law**,
 - Punishment or sentence is by a **court-martial (military court)**, and
 - Punishment is a **Death sentence**.
- **Article 72** empowers the President the power to grant **not only pardons but also reprieves, respites or remissions of punishment or to suspend, remit or commute** the sentence of any person convicted of any offence.
 - **Pardon:** It removes both the sentence and the conviction and completely absolves the convict from all sentences, punishments, and disqualifications.
 - **Commutation:** It denotes the substitution of one form of punishment with a lighter form of punishment. For example, a death sentence may be commuted to rigorous imprisonment.
 - **Remission:** It implies reducing the period of the sentence without changing its character. For example, a sentence of rigorous imprisonment for five years may be remitted to rigorous imprisonment for one year.
 - **Respite:** It denotes awarding a lesser sentence in place of one originally awarded due to some special fact, such as the physical disability of a convict or the pregnancy of a woman offender.

Note:

- **Reprive:** It implies a stay of the execution of a sentence (especially that of death) for a temporary period. Its purpose is to enable the convict to have time to seek pardon or commutation from the President.

Procedure Followed for Granting Pardon

- The process starts with filing a **mercy petition** with the President under **Article 72** of the Indian Constitution.
- Such a petition is then sent to the **Ministry of Home Affairs** for consideration which is then consulted with the **concerned State Government**.
- After the consultation, recommendations are made by the Home Minister and the petition is sent back to the President.

Purpose of Granting Pardon

- Pardon may substantially help in saving an innocent person from being punished due to miscarriage of justice or in cases of doubtful conviction.
- The object of conferring this power on the President is two-fold:
 - To keep the door open for correcting any judicial errors in the operation of law;
 - To afford relief from a sentence, which the President regards as unduly harsh.

Judicial Stand on Pardoning Powers

- In **Maru Ram v Union of India case (1980)**, the constitutional bench of the Supreme Court of India held that the power under Article 72 is to be exercised on the advice of the Central Government and not by the President on his own at his discretion. And that the advice of the Government is binding on him.
- The Supreme Court in **Epuru Sudhakar v Ors. case (2006)** to rule out any case of arbitrariness or executive mala fide upheld that the granting of clemency by the President or Governor can be challenged in court on various grounds such as, the order has been passed without application of mind, or the order is mala fide, or the relevant material has been kept out of consideration.

Difference Between Pardoning Powers of President And Governor

- The scope of the pardoning power of the President under Article 72 is wider than the pardoning power

of the Governor under Article 161 which differs in the following two ways:

- The power of the President to grant pardon extends in cases where the punishment or sentence is by a Court Martial but Article 161 does not provide any such power to the Governor.
- The President can grant pardon in all cases where the sentence given is the sentence of death but the pardoning power of the Governor does not extend to death sentence cases.

Youth Co:Lab

Atal Innovation Mission (AIM), NITI Aayog and the **United Nations Development Programme (UNDP)** India has launched '**Youth Co: Lab**' .

- The initiative aims to create an enabling ecosystem to promote **youth leadership, innovation, and social entrepreneurship**.
- The initiative will convene social innovation challenges at the **national and sub-national level**, which will invite young people in the **age group of 18-29 years** and start-ups to showcase their proposed ideas and solutions to tackle social challenges.
- AIM and UNDP are collaborating to spread awareness about different issues pertaining to youth, the future of work and the **Sustainable Development Goals (SDGs)**.

United Nations Development Programme India

- UNDP has worked in India since 1951 in almost all areas of human development, from systems and institutional strengthening to inclusive growth and sustainable livelihoods.
- UNDP India's country programme for 2018-2022 has three major focus areas:
 - Inclusive growth
 - Environment and energy
 - Strengthening systems and institutions

Pradhan Mantri Innovative Learning Programme- DHRUV

Recently, the **Union Human Resource Development Minister** has launched the **Pradhan Mantri Innovative Learning Programme** named '**DHRUV**'.

Note:

- It is a unique programme **to identify talented students and mentor them for 14 days** so that they can reach their full potential and work for the society.
 - The programme is named DHRUV **after the Pole Star** with the same name. Every student selected under this programme will be called as 'Dhruv Tara'. The students will thus both shine through their achievements and light a path for others to follow.
- The programme will cover **two areas** namely, **Science and Performing Arts**.
 - Overall 60 students will be selected (30 from each area) from across the country.
 - The students will be broadly from classes 9 to 12 from all schools including government and private.



Note:

Economic Scenario

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- Global Competitiveness Index 4.0: WEF

SARAS Aajeevika Mela

It is a programme to transform rural India in general and the lives of rural women in particular.

- It is an **initiative** by the **Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM)** under the **Ministry of Rural Development (MoRD)**. Its objectives to bring the rural women **Self Help Groups (SHGs)** under one platform so that they can showcase their skills, sell their products, and help them build linkages with bulk buyers.
- Through participation in SARAS Aajeevika Mela, these rural SHG women will get vital national level exposure to understand the demand and taste of urban customers.

Deendayal Antyodaya

Yojana - National Livelihoods Mission

- It was launched by the **Ministry of Rural Development, Government of India** in 2011.
- It is the flagship program of Government of India for **promoting poverty reduction through building strong institutions of the poor, particularly women**, and enabling these institutions to access a range of financial services and livelihoods services.

Self Help Groups

- Self-Help Groups (SHGs) are **informal associations of people** who choose to come together to find ways to **improve their living conditions**.
- It can be defined as **self governed, peer controlled information group of people** with similar socio-economic background and having a desire to collectively perform common purpose.

RBI's Report on State Finances

The **Reserve Bank of India (RBI)** has released a report titled "**State Finances: A Study of Budgets of 2019-20**".

- It is an **annual publication** that provides information, analysis and an **assessment of the finances of state governments**.

Key Findings

➤ Fiscal Deficit:

- States' Gross Fiscal Deficit (GFD) has **remained within the Fiscal Responsibility and Budget Management Act (FRBM)** threshold of **3% of the Gross Domestic Product (GDP)** during 2017-18 and 2018-19.
- For 2019-20, States have budgeted a consolidated GFD of 2.6% of GDP.

➤ Concerns:

- Outstanding debt of States has risen over the last five years to 25% of GDP, making sustainability of debt the main fiscal challenge.
- States' GFD was within the threshold of the FRBM Act due to a sharp reduction in capital expenditure by states.
 - It has potentially adverse implications for the pace and quality of economic development. As states employ about five times more people and spend around one and a half times more than the Centre.
 - Moreover, public expenditure by states influences the quality of the physical and social capital infrastructure of the economy.

Note:

➤ Challenges:

- States' revenue prospects are confronted with **low tax buoyancies, shrinking revenue autonomy** under the Goods and Services Tax (GST) framework and unpredictability associated with transfers of the Integrated GST (IGST) and grants.
- States may have to take over **higher losses of power distribution companies** if they do not show a turnaround in their performance.

➤ Suggestions:

- States need to gradually harness the GST database to expand the tax base.
- They also need to review their tariff policies relating to power and irrigation, keeping in mind the break-even user charges.
- States need to combine efforts towards mobilizing higher revenues with strategies to maximize efficiency gains rather than a mere increase in tax rates.

The Fiscal Responsibility and Budget Management Act

- The Act was enacted in 2003 which set targets for the government to reduce fiscal deficits. The targets were put off several times.
- Hence, in May 2016, the government set up a committee under NK Singh to review the FRBM Act.

Fiscal Deficit

- Fiscal Deficit is the difference between the total income of the government (total revenue receipts and non-debt capital receipts) and its total expenditure.
- It is an indication of the total borrowings needed by the government.
 - It is to be noted that while calculating the total revenue, borrowings are not included.
- **Gross Fiscal Deficit:** It is the excess of total expenditure over revenue receipts (including external grants) and non-debt capital receipts.
- **Net Fiscal Deficit:** It is the gross fiscal deficit less net lending of the Central government.

Current Account Deficit

According to the data released by the [Reserve Bank of India \(RBI\)](#), the Current Account Deficit (CAD) of the country came down to 2% of GDP in the first quarter

(April 2019 – June 2019) of the current financial year from 2.3% of GDP of the same quarter of 2018.

- According to the RBI, the CAD declined on a year-on-year basis, because of a number of factors such as:
 - **Invisible Account: Higher invisible receipts**, i.e., rise in net earnings from travel, financial services, telecommunications, computer and information services.
 - **Trade Visible:** Trade deficit has been lower recently, due to lower crude oil prices and also due to the declining demand.
 - **Rising Private transfers (Remittances).**

Current Account Deficit

- The current account measures the flow of goods, services, and investments into and out of the country.
 - It represents a country's foreign transactions and, like the capital account, is a component of a country's Balance of Payments (BOP).
- There is a **deficit in Current Account** if the value of the goods and services imported **exceeds** the value of those exported.
 - A country with **rising CAD** shows that it has become **uncompetitive**.
- In India, the **Current Account Deficit** could be **reduced by boosting exports and curbing non-essential imports** such as gold, mobiles, and electronics.
- Current Account Deficit and Fiscal Deficit (also known as "budget deficit" is a situation when a nation's expenditure exceeds its revenues) are together known as **twin deficits** and both often reinforce each other, i.e., a high fiscal deficit leads to higher CAD and vice versa.

PRAKASH Portal

The government has launched a web portal, PRAKASH (Power Rail Koyla Availability through Supply Harmony).

- It aims to improve **coordination between the power, coal and railway ministries to ensure coal supplies to power plants**.
- It has been developed by National Thermal Power Corporation (NTPC) and sources data from different stakeholders such as Central Electricity Authority (CEA), Centre for Railway Information System (CRIS) and coal companies.

Note:

- The portal is **not accessible to the general public**.
- The present mechanism to review the coal supply situation consists of an inter-ministerial group.
 - It faces several issues such as scattered information, the correctness of data from different organizations, timely availability of data, etc. leading to difficulties in decision making.
- **Benefits of the Portal:**
 - Stakeholders can review the overall availability of coal at thermal power plants in different regions.
 - The coal company will be able to track stocks and the coal requirement at power stations for effective production planning.

National Thermal Power Corporation (NTPC)

- NTPC is India's largest energy conglomerate with roots planted way back in 1975 to accelerate power development in India.
- Its mission is to provide reliable power and related solutions in an economical, efficient and environmentally friendly manner, driven by innovation and agility.
- It became a **Maharatna company** in May, 2010.

Central Electricity Authority

- CEA is an organization constituted under Section 70 of the Electricity Act, 2003.
- One of its objectives is to formulate National Electricity Plan every five years for optimum utilization of available resources for power generation.
- It works under the **Ministry of Power**.

Centre for Railway Information System

- The Ministry of Railways set up CRIS as a society in July 1986.
- Its area of work includes information systems from all disciplines and functions of the Indian Railways.
- It is **headquartered** in **New Delhi**.

Waterfall Approach and Money Market

The market regulator **Securities and Exchange Board of India (SEBI)** has directed mutual fund houses to follow the "**waterfall**" **approach** for the valuation of money market and debt securities in order to bring **uniformity and consistency in valuation**.

- **SEBI** noted various instances wherein mutual funds have used their own trades of relatively small quantities in order to value the entire holding of such security. To avoid this, the waterfall approach is to be adopted.
- Under the Waterfall Approach, all traded securities would be valued on the basis of traded yields.
 - For Government Securities (including T-bills), Volume Weighted Average Yield (VWAY) for trades in the last one hour of trading shall be used.
 - Valuation of all other money market and debt securities (including Government securities not traded in the last one hour) shall be done on the basis of VWAY of all trades during the day.

Volume Weighted Average Yield

- It is a trading benchmark used by traders that gives the average price at which the securities has been traded throughout the day, based on both volume and price.
- It is important because it provides traders with insight into both the trend and value of a security.

Money Market Fund

- Money Market Mutual Funds (MMMMF) are **short-run** liquid investments that invest in **high-quality money market instruments** such as **Treasury Bills (T-Bills)**, Repurchase Agreements (Repos), Commercial Papers, and Certificate of Deposits.
- Money Market Fund is an **open-ended mutual fund**.
- It invests in **short-term debt securities** like treasury bills and commercial paper.
 - Debt securities funds invest in fixed income securities like bonds and treasury bills.

Strategic Disinvestment

The **Department of Investment and Public Asset Management (DIPAM)** under the Ministry of Finance has been made the **nodal department** for the **strategic stake sale in the Public Sector Undertakings (PSUs)**.

- Till now, PSUs for strategic sale were identified by **NITI Aayog**. From now, DIPAM and NITI Aayog will jointly identify PSUs for strategic disinvestment.
- This has been done to streamline the process, reducing the role of administrative ministries which often used to place hurdles in the path of major stake sales.

Note:

Department of Investment and Public Asset Management

- The Department of Disinvestment was one of the departments under the **Ministry of Finance**.
 - It was **renamed** as **Department of Investment and Public Asset Management (DIPAM) in 2016**.
- The **mandate of the department** is as follows:
 - All matters relating to the **management** of Central Government investments in equity including disinvestment of equity in Central Public Sector Undertakings.
 - All matters relating to the sale of Central Government equity through offer for sale or private placement or any other mode in the erstwhile Central Public Sector Undertakings.

Strategic Disinvestment

- The strategic disinvestment would imply the sale of a substantial portion of the Government shareholding of a **Central Public Sector Enterprises (CPSE) of upto 50%, or such higher percentage** as the competent authority may determine, along with **transfer of management control** of a public sector entity to **some other entity** (mostly to a private sector entity).
 - Unlike the simple disinvestment, strategic sale implies some sort of **privatization**.
- It follows the **basic economic principle** that the government should not be in the business where economic potential of entities may be better discovered in the hands of the strategic investors due to various factors, e.g., infusion of capital, technology up-gradation, and efficient management practices, etc.

World Cotton Day

The **World Trade Organisation (WTO)** is hosting a event at the request of **Cotton-4 (Benin, Burkina Faso, Chad, and Mali)** to celebrate their official application for recognition of **October 7** as **World Cotton Day by the United Nations**.

- The World Trade Organisation is organizing World Cotton Day event in collaboration with the United Nations Food and Agriculture Organization (FAO), the United Nations Conference on Trade and Development (UNCTAD), the International Trade Centre (ITC), and the International Cotton Advisory Committee (ICAC).

- The celebration aims to seek **new collaborations with the private sector** to promote technological advances for the cotton related industries and production in **developing countries**.

Cotton

- Cotton is a **Kharif crop** that requires **6 to 8 months** to mature.
 - Its time of sowing and harvesting differs in different parts of the country depending upon the climatic conditions.
- Cotton is the crop of **tropical and sub-tropical areas** and requires uniformly high temperatures varying between **21°C and 30°C**.
 - The growth of cotton is retarded when the temperature falls below 20°C.
- Cotton is a **drought-resistant** crop ideal for **arid climates** and requires an **average annual rainfall of 50- 100 cm**.
- It requires at least **210 frost-free days** in a year.
- It occupies just **2.1% of the world's arable land**, yet it meets **27% of the world's textiles need**.
- **India** is the **second-largest producer** of cotton in the world after China.
- Between 2011 and 2018, India implemented a Cotton Technical Assistance Programme (**Cotton TAP-I**) for seven African countries namely Benin, Burkina Faso, Mali and Chad and also Uganda, Malawi, and Nigeria.

Cotton Corporation of India

- CCI was established in 1970 under the administrative control of the **Ministry of Textiles** as a **Public Sector Undertaking** under the Companies Act, 1956.
- **Headquartered at Navi Mumbai (Maharashtra)**, CCI aims to safeguard the economic interest of cotton farmers, and to ensure a smooth supply of good quality cotton to the textile industry in India.
- The major role of the CCI is to undertake price support operations, whenever the market prices of cotton fall below the Minimum Support Prices (MSP).

Global Competitiveness Index 4.0: WEF

The **World Economic Forum (WEF)** has released the **2019 edition of the Global Competitiveness Report**

Note:

which features the **Global Competitiveness Index 4.0 (GCI 4.0)**.

- **GCI 4.0** implies the **fourth version of the Global Competitive Index, introduced in 2018**. However, the index has been an **annual edition since 1979**.
- GCI 4.0 provides a detailed map of the factors and attributes that drive productivity, growth and human development in the era of the Fourth Industrial Revolution.
- It covers **141 economies**, which account for 99% of the world's GDP.
- The GCI 4.0 of 2019 revealed that, on an average, **most economies continue to be far from the competitiveness "frontier"**—the aggregate ideal across all factors of competitiveness.
 - A country's performance on the overall GCI is reported as a **'progress score' on a 0-100 scale**, where 100 represents the 'frontier', an ideal state where an issue ceases to be a constraint to productivity growth.
- The report is based on **12 set of factors (pillars)** that determine productivity. These are: Institutions, Infrastructure, ICT adoption, Macroeconomic stability, Health, Skills, Product market, Labour market, Financial system, Market size, Business dynamism, and Innovation capability.
- **In South Asia, Sri Lanka is the most improved country** at 84th rank, followed by Bangladesh (105th), Nepal (108th) and Pakistan (110th).
- **China (28th)** is the **best performer** among the BRICS countries.
- **Singapore** has become the **world's most competitive economy** in 2019, pushing the **US to second place**.
- **Vietnam (67th)** registered the **highest improvement** across the globe.

Key Findings

- India **moved down 10 places** to the rank of **68th** compared to the **58th rank in 2018** primarily because of **faster improvements of several countries previously ranked lower**.
- **Positives for India:**
 - India ranked **high on macroeconomic stability** (Score - 90, Rank - 43rd) and **market size** (93.7, 3rd).
 - India performed well when it comes to **innovation** (50.9, 35th), well ahead of most emerging economies and on par with several advanced economies.
 - Its **financial sector** (69.5, 40th) is relatively **deep and stable**.
- **Challenges for India:**
 - India ranked beyond 100th on five pillars and featured in the top 50 of just four pillars.
 - Major shortcomings in some of the basic enablers of competitiveness, like **ICT adoption is limited** (31.1, 120th) but has improved sharply (+8 since the 2017 edition).
 - **Health conditions remain poor**, as reflected in low healthy life expectancy (59.4 years, 109th), which is one of the shortest outside Africa and significantly below the South Asian average.
 - **Weak banking system** (60.4, 89th) and **low skills base** (50.5, 107th).
 - Product market efficiency (50.4, 101st) is undermined by a **lack of trade openness** (43.9, 131st).
 - The labour market is characterized by a lack of worker rights' protections, insufficiently developed active labour market policies and critically low participation of women (ratio of female workers to male workers of 0.26, 128th).



Note:



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International Relations

Highlights

- India-China 2nd Informal Summit- Mamallapuram Summit
- Vice President's Visit to Comoros and Sierra Leone
- U.K. Verdict on Nizam of Hyderabad
- C40 World Mayors' Summit
- Turkey's Offensive in Syria
- WEF India Economic Summit
- India-Bangladesh
- India-Netherlands

India-China 2nd Informal Summit – Mamallapuram Summit

The Prime Minister of **India** and the President of the People's Republic of **China** held their **Second Informal Summit** in **Chennai (Mamallapuram)**, India.

- **First India- China informal summit** invoked the '**Wuhan spirit**', whereas the **second informal India-China summit** has called for '**Chennai Connect**'.
- Informal summits allow discussion on wide-ranging issues, they are not particularly purpose-specific, and are sometimes considered to play bigger roles in diplomatic dialogue than formal exchanges.
 - It also acts as supplementary exchanges to annual summits.

Key Points

- **Reiteration of the first Informal Summit in Wuhan (2018):**
 - Both countries reiterated the consensus reached during the first informal Summit in Wuhan to consider India and China as factors for stability in the current international landscape.
 - It also emphasized upon managing the differences and **not to allow differences on any issue to become disputes.**
- **Economic Development:**
 - A **High-Level Economic and Trade Dialogue** mechanism to be established to enhance trade and commercial relations
 - The **manufacturing partnership** is to be established to encourage mutual investments in identified sectors.

- India-China agreed to support and strengthen the **rules-based multilateral trading system.**
- **Boundary Issues:**
 - Boundary issues to be solved on the lines of a mutually-agreed framework based on Political Parameters and Guiding Principles that were agreed by the two sides in 2005.
- **Sister State Relations:**
 - Considering the age-old commercial as well as maritime linkages, both the countries agreed to establish **Sister-State Relations between Tamil Nadu and Fujian Province.**



- An academy to study links between Mahabalipuram and Fujian province on the lines of the experience between Ajanta and Dunhuang to be established.
- **70 years of India-China relations:**
 - The **year 2020** will mark the 70th anniversary of the establishment of India-China diplomatic

Note:



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relations. To celebrate the event two countries will be organizing 70 activities to emphasize the historical connection between the two civilizations.

- Also the year 2020 will be designated as the **Year of India-China Cultural and People to People Exchanges**.

Why Mamallapuram was chosen?

- India chose Mamallapuram as a symbol of India's '**soft power**'.
- Mamallapuram is an important town of the erstwhile **Pallava dynasty** that ruled in parts of South India from 275 CE to 897 CE.
- The name Mamallapuram got distorted during the British era to Mahabalipuram and thus it is also known as Mahabalipuram.
- The city of Mamallapuram was founded by the Pallava king Narasimhavarman I in the 7th century AD.
 - The name Mamallapuram **derives from Mamallan, or "great warrior"**, a title by which the Pallava King Narasimhavarman I was known.
- It is renowned for its architecture, widely admired across the world.
- Mamallapuram and the Pallava dynasty are also historically relevant, for the **earliest recorded security pact between China and India** (in the early 8th century) that involved a Pallava king (Rajasimhan, or Narasimha Varma II), from whom the Chinese sought help to counter Tibet.

Wuhan Spirit

- Wuhan Spirit is in line with the five principles of peaceful coexistence (**Panchsheel**) jointly advocated by China and India in the 1950s.
- Wuhan Spirit **highlighted**:
 - To form the "backbone" of economic globalization, and they should jointly make positive contributions to global peace and development.
 - To cooperate, for the first time ever, on a joint project in Afghanistan.
 - China indicated that India's refusal to join the Belt and Road Initiative will not come in the way of economic cooperation.

Vice President's Visit to Comoros and Sierra Leone

The Vice President of India recently visited Comoros and Sierra Leone - two African countries.

- It was **first-ever visit by such a high-level Indian dignitary** to Comoros, an archipelago situated off the Southeast coast of Africa and to Sierra Leone, the country of Western Africa.
- The agenda was to deepen ties with African nations.

India - Comoros

- India and Comoros signed **6 Memorandum of Understandings (MoUs)** on defence, health (**e-Arogya Bharati**) and culture (**e- Vidya Bharati**).
- India announced **line-of-credit of USD 41.6 mn** for setting up an 18MW power plant in Moroni (capital city) and a vocational training centre.
- The Vice President also called for enhancing defence ties in maritime domain between India and the island nation of Comoros as part of a collaborative security architecture in the Indian Ocean.

Ties between India and Comoros

- Comoros supports **India's candidature for a permanent seat in the UN Security Council (UNSC)**.



- It is a member of the **Indian Ocean Rim Association (IORA)** as well as the **International Solar Alliance**.
- Comoros avails scholarship/training programmes offered by India under the **Indian Technical & Economic Cooperation (ITEC)** scheme.

Note:

India – Sierra Leone

- India announced the decision to **establish a High Commission** in Sierra Leone.
- Both the countries agreed to enhance cooperation in agriculture, food processing, information technology, infrastructure development and capacity building.
 - A MoU was signed for Sierra Leone to participate in **India's Pan-African tele-Education, tele-Medicine initiatives**, e-VidyaBharati and e-Arogya Bharati.
 - India will soon initiate steps to set up a **Centre of Excellence in IT in Sierra Leone**.
- An agreement was signed to initiate a **cultural exchange program** between the governments of India and Sierra Leone for the years **2019-23**.

Ties between India and Sierra Leone

- India was **among the first countries to contribute to the UN Mission in Sierra Leone (UNAMSIL)** with the deployment of 4000 strong Indian Military contingent.
- India has extended **concessional lines of credit to Sierra Leone worth USD 123 million** in sectors such as agriculture, water, and transmission line.



- India has also undertaken grant projects through India Brazil South Africa Forum (IBSA) funds and **provided direct humanitarian assistance to Sierra Leone** during the Ebola crisis in 2014 and during floods in 2017.
- Sierra Leone is also a beneficiary of the Indian Technical and Economic Cooperation (ITEC) programme.
- Sierra Leone is one of the members of the International Solar Alliance.

Indian Technical and Economic Cooperation (ITEC) Programme

- The Indian Technical and Economic Cooperation

(ITEC) Programme was **launched by the Government of India on 15th September 1964** as a programme of **bilateral cooperation and technical assistance**.

- Under ITEC and its sister programme SCAAP (Special Commonwealth African Assistance Programme), **161 countries** in Asia, Africa, East Europe, Latin America, the Caribbean as well as Pacific and Small Island countries are invited to share in the Indian developmental experience acquired over six decades of India's existence as a free nation.
- The ITEC programme **provides for organizing training courses in India**, deputation of Indian experts abroad, **aid for disaster relief**, gifting of equipment, study tours and feasibility studies/consultancy services.

U.K. Verdict on Nizam of Hyderabad

Recently, the High Court of England and Wales ruled in favour of India and the last **Nizam of Hyderabad**-Osman Ali Khan's descendants granting them access to a **£35 million fund**.

- The court rejected Pakistan's claim in the case (that dates back to 1948), over funds belonging to the Nizam of Hyderabad deposited in a London bank account.

Background

- The case relates to the transfer of an amount that now worths around **£35 million (approximately ₹306 crore)** by the Nizam's envoy and foreign minister (in London) to the account of the High Commissioner of Pakistan on September 16, 1948, which the bank processed on September 20, 1948.
 - Hyderabad's armed forces had already surrendered to the Indian Army on September 17, 1948, after a military operation known as "**Operation Polo**."
 - Within days of surrender, the last Nizam of the princely state of Hyderabad-Osman Ali Khan (who died in 1967), sent a message to the National Westminster Bank demanding that money back into his account. But, Pakistan also claimed the money.
- Hence, the present case was instituted by Pakistan in 2013 against the bank to transfer the money to Pakistan.

Note:

Integration of Princely State of Hyderabad into India

- Hyderabad was one of the largest native/princely states in India. It was ruled by the Nizams who accepted the paramountcy of the British sovereign.
 - Originally, Hyderabad State was founded by **Mir Qamar-ud-din Khan** who was the governor of Deccan under the Mughals from **1713 to 1721**.
 - In **1724**, he resumed rule under the title of Asaf Jah (granted by Mughal Emperor Muhammad Shah)
- The **Nizam of Hyderabad like the Nawab of Junagadh and the ruler of Kashmir** did not accede to India before the date of independence, i.e, 15th August 1947.
- Consequently internal chaos emerged in the state of Hyderabad because of which, on 13th September 1948, the Indian Army was sent into Hyderabad under **Operation Polo** (military operation to annex Hyderabad into the Union of India).

C40 World Mayors' Summit

The C40 World Mayors' Summit held from **9th - 12th October 2019** in **Copenhagen, Denmark**.

- It is a **conference where city leaders from around the world** share ideas on green urban development, and on ways to get national governments to act on climate issues.
- Apart from Mayors and Deputy Mayors, the Summit is being attended by climate experts, influencers, business leaders, innovators, changemakers, and citizens.
- Over the past decade, **C40 has convened six Mayors Summits**, hosted by London (2005), New York (2007), Seoul (2009), São Paulo (2011), Johannesburg (2014) and Mexico City (2016).
- At the **2019 Summit**, the **Mayor of Los Angeles** has taken over as **chair of the group**.
- The **cities from India** that are part of the C40 are **Delhi NCT, Bengaluru, Chennai, and Kolkata**.

C40

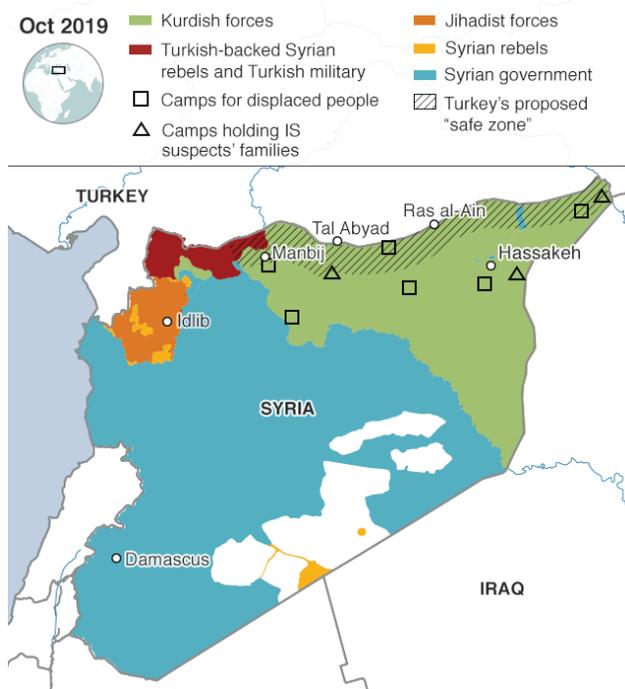
- The C40 group was started in **2005** by the then Mayor of London, Ken Livingstone, and **got its name in 2006**, since it had 40 members that year.
- It has 96 members at present, representing over 70 crore people, and one-quarter of the global economy.

- It **connects the world's largest cities** to deliver urgent and essential climate action needed to secure a sustainable future for urban citizens worldwide.
- The group is **committed to delivering on climate targets set under the 2016 Paris Agreement**, and sets the bar for cities to develop and implement local level plans that comply with those targets.
- It has its **offices in New York, USA and London, UK**.

Turkey's Offensive in Syria

Turkey launched a **military operation** called **Operation Peace Spring** against the Syrian Kurdish militia (YPG) in Northeast Syria just days after U.S. troops pulled back from the area.

- The YPG was the USA's ally in the war against the Islamic state. However, withdrawal of US troops allowed Turkey to launch the attack.



- Turkey stated that the operation was aimed to **eliminate "terror corridor"** on Turkey's southern border as well as to **create a "safe zone"**.
 - Turkey considers the **Syrian Kurdish militia as an offshoot of the Turkey Workers Party (PKK)**, the Kurdish militant group in Turkey. Therefore as a threat to the Turkish side.
 - Turkey **intends to settle millions of Syrian refugees**, it is hosting, in the proposed safe zone.

Note:

- World powers fear the action could open a new chapter in Syria's war and worsen the regional turmoil.
 - The present chaos could **present the Islamic State with an opportunity** to stage a revival and worsen the situation in the middle east.
- Syria considered the attack as **"Turkish Aggression" over its territory.**

India's Stand

- India issued a strong statement expressing **"deep regret" over Turkey's military action** in Syria and called it unilateral and offensive.
- India called upon Turkey to exercise restraint and to respect the territorial integrity and sovereignty of Syria.
- The diplomatic exchanges between Turkey and India have intensified in recent weeks following India's decision to end the special status of Kashmir.
 - **Turkey supported Pakistan's stance for reversal of the scrapping of Article 370.**

Kurds

- The Kurds are one of **the indigenous peoples of the Mesopotamian plains** and the highlands i.e., current south-eastern Turkey, north-eastern Syria, northern Iraq, north-western Iran and south-western Armenia.
- They form a distinctive community, united through race, culture and language, even though they have no standard dialect.
 - They also adhere to a number of different religions and creeds, although the majority are Sunni Muslims.
- In the early 20th Century, many Kurds began to consider the creation of a homeland - generally referred to as "Kurdistan".
 - But the boundaries of modern map of middle east made no provision for a Kurdish state and left Kurds with minority status in their respective countries.
- Thus, **Kurds from Turkey, Iraq, Syria and Iran demands recognition of their tradition, language and homeland state** (to be constituted with **parts of south-eastern Turkey, north-eastern Syria, northern Iraq, north-western Iran**).

WEF India Economic Summit

The World Economic Forum's **33rd India Economic Summit** took place in collaboration with the **Confederation of Indian Industry (CII)** in Delhi.

- The theme of the Summit was **'Innovating for India: Strengthening South Asia, Impacting the World'**.
- Bangladesh's Prime Minister co-chaired the Summit with Singapore's Deputy Prime Minister.

Key Highlights

- The challenge of global inequality in terms of wealth and income—both within and across countries.
- More than 70 global and regional leaders committed to support investments in integrated food value chains throughout the country.
- The co-chairs called for improved regional cooperation in South Asia and Southeast Asia.
- Bilateral cooperation and innovation is crucial for **'shared prosperity'**.

Aspects Related to India

- The **entire neighborhood, minus one**, has been a fairly good story for regional cooperation.
- India also expressed **cautious optimism** about a potential free trade agreement between India and the United States.
- The **drug delivery through drones** will be launched for life-saving medical supplies and vaccines to rural communities.
- The **Forum's Young Global Leaders community** will **mobilize more than \$3.5 million** in resources to finance the urban sanitation ecosystem in 10 Indian cities.
- **The Smart Cities Mission India joined the G20 Smart City Alliance**, chaired by the World Economic Forum, to establish universal norms and guidelines for safe and responsible implementation of smart city technology.
- A **100km electric vehicle** corridor has been proposed in **Punjab** integrated with the **World Economic Forum's Moving India initiative**.
- **Forum's Clean Skies** will fly 1 million airline passengers between Delhi and Mumbai by 2030.

Note:

World Economic Forum

- It was established in **1971 as a not-for-profit foundation** and is **headquartered in Geneva, Switzerland.**
- It is an international organization for **Public-Private Cooperation.**
- It engages the foremost political, business, cultural and other leaders of society to shape global, regional and industry agendas.

Confederation of Indian Industry

- CII is a non-government, not-for-profit, industry-led and industry-managed organization, founded in 1895.
- It works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil society, through advisory and consultative processes.

India-Bangladesh

Recently, India and Bangladesh signed seven agreements and also inaugurated three projects to deepen their partnership.

Key Highlights

- The agreements include:
 - The **use of the Chattogram and Mongla ports in Bangladesh** for the movement of goods to and from India, particularly from **Northeastern India.**



- Use of **Bangladesh's Feni river** for drinking water supply in Tripura.
- Exchange of data and information to prepare a framework of interim sharing agreements for six rivers — **Manu, Muhuri, Khowai, and Gomati**

rivers of Tripura and Dharla river of Bangladesh and Dudhkumar river of West Bengal.

- **Daudkanti (Bangladesh)-Sonamura (Tripura)** inland water trade route to be included under the Protocol of the **Inland Water Transit and Trade.**
- Consensus on lifting restrictions on **entry and exit from land ports** in India for Bangladeshi citizens traveling on valid documents.
- Implementation of the **Lines of Credit (LoCs)** committed by India to Bangladesh.
- Both sides noted the progress on the establishment of the **Coastal Surveillance Radar System** in Bangladesh.
 - India has provided such systems to Mauritius, Seychelles, Maldives and planning one in Myanmar.
 - The coastal surveillance system will pave way for Indo-Bangladesh **White Shipping Agreement and coastal security purpose in the future** in the Bay of Bengal region.
- An early operationalization of the **Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicles Agreement** for movement of goods and passengers between the member.
- The establishment of twelve new **Border Haats** which have been agreed by both countries.
- The **Ganga-Padma barrage project** to be conducted as part of an upgraded version of **the 1996 Ganga Water Sharing treaty.**

Historical Background

- India was one of the **first countries to recognize Bangladesh** and establish diplomatic relations immediately after its independence in 1971.
 - Both countries share the **historical legacy of cooperation** and support during the **Liberation War of 1971**
- India and Bangladesh share 4096.7 km. of the border, which is the **longest land boundary that India shares with any of its neighbours.**
- India and Bangladesh share **54 common rivers.**
 - A bilateral Joint Rivers Commission (JRC) is working since **1972** to maximize benefits from common river systems.
- Bangladesh is **India's biggest trade partner in South Asia.**
- Cooperation in power sector has become one of the hallmarks of India-Bangladesh relation as **Bangladesh imports 1160 MW of power from India.**

Note:



- The Joint exercises of **Army (Exercise Sampriti)** and **Navy (Exercise Milan)** take place between the two countries.

India-Netherlands

Recently, **the King and Queen of the Kingdom of Netherlands visited India** to give an impetus to the bilateral ties shared by the two nations.

- **LOTUS-HR:**
 - The **second phase of the Local Treatment of Urban Sewage streams for Healthy Reuse (LOTUS-HR)** program was launched by the Union Minister for Science and Technology.
 - **10,000 litres of sewage water will be treated per day** at the India-Netherlands water laboratory in New Delhi.
 - The project was **initiated in July 2017** and aims to manifest a novel holistic **waste-water management** approach that will produce clean water, which could henceforth be reused for various purposes.
- **WetLab:**
 - Another joint initiative highlighted was WetLab – a **design contest** to treat water effectively.
 - It aims to build a **platform for innovative ideas to solve India's urban water challenges** and **contribute to cleaning up India's rivers**.
 - It is a competition that will enable unique learning and networking for young India and Dutch professionals and students.

India – Netherlands Relationship

- Indo-Dutch relations can be traced back to more than 400 years ago when the **first Dutch East India Company (EIC) got established in India** (in around 17th century AD).
- The **official relations** between the two nations were established in the **year 1947** which, since then, have been cordial and friendly.
- **Netherlands is India's 4th largest trading partner in the European Union** and is also one of the leading investor nations in India.



- Netherlands' has **supported** India's membership to the different **Export Control Regimes** and **India's claim to a permanent seat in the UN Security Council**.
- India and the Netherlands share common concerns with regard to contemporary challenges that include climate action, cyber-security, and terrorism.
 - India is keen to share and learn from the Netherlands on the river rejuvenation.



Note:



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Science and Technology

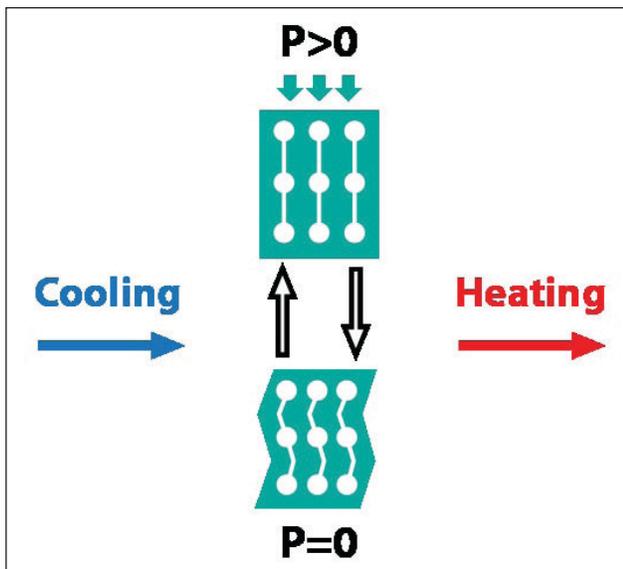
Highlights

- *Elastocaloric Effect*
- *MOSAIC: An Arctic Observatory*
- *Geotail*
- *GEMINI Device*
- *LCROSS: NASA*
- *Malware Smominru*
- *Information Fusion Centre – Sharing Maritime Data*
- *Saturn: Planet with Most Moons*

Elastocaloric Effect

According to a research published in the Journal Science, the **elastocaloric effect**, if harnessed, may be able to **do away with the need of fluid refrigerants** used in fridges and air-conditioners.

Background



- Refrigeration plays an important role in a wide range of human activity and keeping people and things cool consumes huge amounts of energy.
- They use fluids such as **hydrofluorocarbons** which are **susceptible to leakages**, and can contribute to **global warming**.
- An **alternative** approach involves using **“caloric” materials**, which release heat when subjected to an external stimulus such as an applied magnetic or electric field or a compressive force. When the

stimulus is removed, the material will absorb heat, thus cooling its surroundings.

- Recently, owing to the strong demand for **efficient and environmentally friendly** refrigeration technologies, materials with giant caloric effects, including elastocaloric, have been widely investigated.

Elastocaloric Effect

- When **rubber bands are twisted and untwisted**, it produces a cooling effect. This is called the “elastocaloric” effect.
- The elastocaloric effect can be regarded as the **entropy change under isothermal condition or temperature change under adiabatic condition** when a mechanical stress is used or released in a given material.
 - Energy is the ability to do work. Although all forms of energy are interconvertible, and all can be used to do work, it is not always possible, even in principle, to convert the entire available energy into work.
 - **Entropy is a measure of how much energy is not available to do work.**
- Basically, elastocaloric materials are **solids capable of stress-induced reversible phase transformations** during which latent heat is released or absorbed.

MOSAIC: An Arctic Observatory

The Multidisciplinary Drifting Observatory for the Study of Arctic Climate (MOSAIC) is an **international research expedition** to study the physical, chemical, and biological processes that coupled the Arctic atmosphere, sea ice, ocean, and ecosystem.

Note:

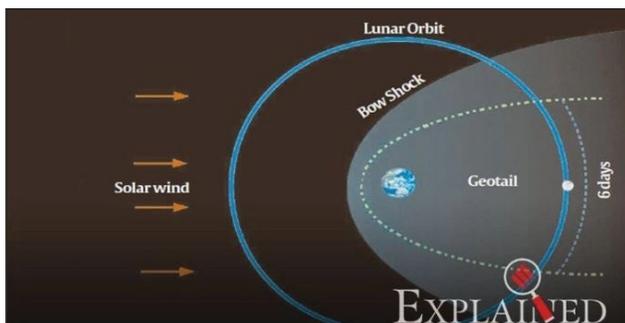
- MOSAiC is the **first year-round expedition** into the **central Arctic** exploring the Arctic climate system.
- The distributed regional network of observational sites will be set up on the sea ice surrounding the ship icebreaker RV Polarstern.
 - The **icebreaker RV Polarstern** is a **German Research Vessel** which is mainly used for research in the Arctic and Antarctica.
- The results of MOSAiC will contribute to enhance understanding of the regional and global consequences of **Arctic climate change and sea-ice loss and improve weather and climate predictions.**
- The project has been designed by an international consortium of leading polar research institutions, under the umbrella of the **International Arctic Science Committee (IASC).**

International Arctic Science Committee

- The International Arctic Science Committee (IASC) is a non-governmental, international scientific organization.
- IASC promotes and supports leading-edge interdisciplinary research in order to foster a greater scientific understanding of the Arctic region and its role in the Earth system.

Geotail

Recently, an instrument on [Chandrayaan-2](#) named **CLASS (Chandrayaan-2 Large Area Soft X-ray Spectrometer)** has detected charged particles present on the moon soil during the orbiter's passage through the "Geotail".



- According to ISRO, the intensity of these **charged particles** (believed to be mostly electrons) changed as much as **ten times** the levels **outside the Geotail.**

- The detection of these charged particles on the surface of the moon can help to measure the fluxes, energy spectra, and charge types of charged particles bombarding the lunar surface and to investigate the interaction of these particles and other forms of radiation with the lunar surface.
- The **Geotail region exists** as a result of the **interactions between the Sun and Earth.**
 - The Sun emits the solar wind, which is a continuous stream of charged particles that are embedded in the extended magnetic field of the Sun.
 - Since the Earth has a magnetic field, it obstructs the solar wind plasma.
 - This interaction results in the formation of a magnetic envelope around Earth.
 - On the Earth side facing the Sun, the envelope is compressed into a region that is approximately three to four times the Earth's radius.
 - On the opposite side, the envelope is stretched into a long tail, which extends beyond the orbit of the Moon called the Geotail.
- The **Geotail region** allows the **best scientific observations.**
 - Once **every 29 days**, the **Moon traverses the Geotail for about six days.**

Chandrayaan-2 Large Area Soft X-ray Spectrometer (CLASS)

- The objective of CLASS is to map the abundance of major rock-forming elements on the lunar surface using the technique of X-ray fluorescence during solar flare events.
 - The solar flare provides a rich source of X-rays to illuminate the surface.
 - Secondary X-ray emission resulting from this can be detected by CLASS to directly detect the presence of key elements like Sodium (Na), Calcium (Ca), Aluminium (Al), Iron (Fe), etc. on the lunar surface.

GEMINI Device

The **Union Minister of Earth Sciences** has recently launched the **Gagan Enabled Mariner's Instrument for Navigation and Information (GEMINI) device.**

- The device is developed for effective **dissemination of emergency information and communication on**

Note:

Ocean States Forecast and mapping of Potential Fishing Zones (PFZ) to fishermen.

- **Ocean States Forecast** provides the accurate state of the ocean that includes the forecasts related to winds, waves, ocean currents, water temperature, etc.
- **PFZ** provide information about the probable locations of fish aggregation in the seas to the fishermen.
- GEMINI is a **portable receiver** that is **linked to Indian Space Research Organization (ISRO) – satellites**. The device can **send signals up to 300 nautical miles**.
- **Indian National Centre for Ocean Information Services (INCOIS)** in **collaboration** with the **Airports Authority of India (AAI)** utilized the **GAGAN (GPS Aided Geo Augmented Navigation) satellite** while developing the GEMINI device.
 - **GAGAN** was developed by **ISRO and the AAI**. It is **India's first satellite-based global positioning system** that relies on ISRO's GSAT satellites.
- The **drawback** of this device is that it **only allows one-way communication**, i.e, it can't be used by fishermen to make calls.
 - Also, it is relatively **expensive for the average fisherman** (priced at ₹9,000 per device). The attempts are being made to subsidize it by as much as 90%.

Indian National Centre for Ocean Information Services

- INCOIS is an **autonomous organization** under the **Ministry of Earth Sciences (MoES)**.
- It was established in **1999** and is located in **Hyderabad**.
- It is **mandated** to provide the best possible ocean information and advisory services to society, industry, government agencies and the scientific community through sustained ocean observations and constant improvement through systematic and focused research.

Airports Authority of India

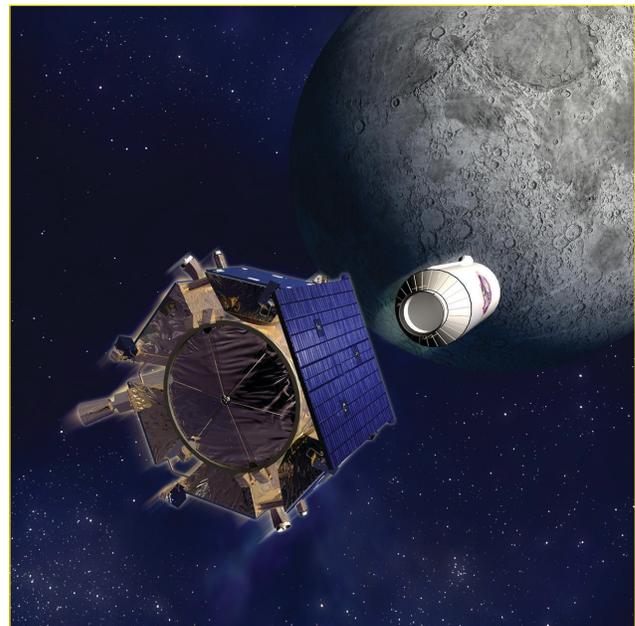
- It was **constituted by an Act of Parliament** and came into being on **1st April 1995**.
- It is a **Miniratna - Category -1 Public Sector Enterprise**.
- It has been entrusted with the **responsibility of creating, upgrading, maintaining and managing**

civil aviation infrastructure both on the ground and air space in the country.

- It manages **125 airports**, which include 18 International Airport, 7 Customs Airports, 78 Domestic Airports and 26 Civil Enclaves at Defense airfields.
- It is headquarter in **New Delhi**.

LCROSS: NASA

A decade after **National Aeronautics and Space Administration (NASA)** sent a **Lunar CRater Observations and Sensing Satellite (LCROSS)** to the moon's south pole, the space agency is about to **start the same project again**.



- LCROSS was **launched** with the Lunar Reconnaissance Orbiter (LRO) **in 2009**.
 - LRO is a **NASA robotic spacecraft** currently orbiting the moon in an eccentric polar mapping orbit.
- It aimed to determine **if water-ice exists in a permanently shadowed crater at the Moon's south pole**.
- LCROSS and LRO found **evidence of the lunar soil in shadowy craters**.
- It also revealed that the Moon is chemically active and **has a water cycle**.
- LCROSS also confirmed the **water was in the form of mostly pure ice crystals** in some places.

Note:

Malware Smominru

Malware Smominru, whose incidence was **first reported in 2017, continues to infect** computers in a big way.

- It affects **nearly 4,700 computers every day**, with over 90,000 computers affected globally in August 2019.
- The **botnet** relies on more than **20 dedicated servers**, mostly located in the **US**, though some are hosted in **Malaysia and Bulgaria**.
- In its post-infection phase, it **steals victim's credentials**, installs a **Trojan module** and a **cryptominer** and propagates inside the network.
- The objective seems to silently **use infected computers for mining cryptocurrency** at the victim's expense.
- China, Taiwan, Russia, Brazil and the US have seen the most attacks.

Note:

- **Malware:** Short for **malicious software**, it refers to any kind of software that is designed to cause damage to a single computer, server or computer network. Ransomware, Spy ware, Worms, Viruses, and Trojans are all varieties of malware.
- **Botnet:** The word Botnet is formed from the words **'robot' and 'network'**. It is a network of infected computers that can be controlled remotely, forcing them to send spam, spread viruses, or stage Distributed Denial of Service (DDoS) attacks without the consent of the computer owners.

Information Fusion Centre- Sharing Maritime Data

The [Information Fusion Centre for the Indian Ocean Region \(IFC-IOR\)](#) has started functioning as an information-sharing hub of maritime data.

- The IFC-IOR was **inaugurated in December 2018** within the **premises of the Navy's Information Management and Analysis Centre (IMAC) in Gurugram**.
 - IFC-IOR was established with the **vision of strengthening maritime security** in the region and beyond, by building a common coherent maritime situation picture and acting as a maritime information hub for the region.
 - The **IMAC is the single point centre linking all**

the coastal radar chains to generate a seamless real-time picture of the nearly 7,500 km coastline.

- The centre administers a website to undertake the collection and dissemination of information on a daily basis and hosts the **Monthly Maritime Security Update (MMSU)** highlighting analysis on incidents, warnings, and advisories issued in the IOR.
- It **tracks and monitors 75,000 - 1.5 lakh shipping vessels** in real time round - the - clock.
- It has already built linkages with 18 countries and 15 multinational/maritime security centres.
 - All countries which have signed **white shipping** (commercial shipping information about the movement of cargo ships) information exchange agreements with India are IFC partners.
 - Several Indian Ocean littoral states that have joined the coastal radar chain network include Maldives, Mauritius, Sri Lanka, and Seychelles.

Saturn: Planet with Most Moons

The **discovery of 20 new moons of Saturn** has made **it the planet having the highest number of moons (82)** against 79 moons of Jupiter.

- The discovered moons of the planet Saturn may have once comprised a larger moon that was broken apart in the distant past.
- These moons are the **remnants of the objects that helped for planet formations**, thus studying the remnants might reveal the origin of the planet.
- The **research** related to new moons of the planet Saturn has been **released by the International Astronomical Union's (IAU) Minor Planet Centre**.
 - **IAU** was founded in **1919** and headquartered in **Paris, France**.
 - Its mission is to promote and safeguard the science of astronomy in all its aspects, including research, communication, education and development, through international cooperation.
 - It is the **global authority for naming planetary features** in the solar system.
 - The **Minor Planet Center (MPC)** is the single worldwide location for receipt and distribution of **positional measurements of minor planets, comets and outer irregular natural satellites** of the major planets.



Note:

Environment and Ecology

Highlights

- Plastic invading Nicobar Islands
- 15 Point Directive to Clean Ganga
- Gangetic River Dolphin Census
- Electric Vehicle Charging Guidelines and Specifications
- India's First e-Waste Clinic
- Massive Iceberg Breaks off Antarctica
- Green Wall of India
- World Habitat Day
- Ganga Aamantran

Plastic Invading Nicobar Islands

According to a survey conducted by the researchers from **CSIR-Institute of Minerals and Materials Technology**, the **Andaman and Nicobar Islands** consisting of a group of almost 572 Islands are under **threat from plastic**.



- The **plastic litter** found on the beaches of the island is **mostly of non-Indian origin** that was likely to be **transported by the water currents from South-East Asian countries through the Malacca Straits** (which is a major shipping route) towards the Great Nicobar island.
- About 10 countries including India contributed to the plastic litter on the island namely, Malaysia, Indonesia, Thailand, Singapore, Philippines, Vietnam, India, Myanmar, China, and Japan.

- Major portion of the litter was of Malaysian origin (40%) followed by Indonesia (23.9%) and Thailand (16.3%).
- The huge quantities of marine debris observed on this island might be **due to improper handling of the solid & plastic waste** from fishing/mariculture activity, and ship traffic.
- The intentional dumping of waste by some nations needs to be strictly monitored and prohibited. It is also **violative of the law** mentioned in the **International Convention for the Prevention of Pollution from Ships**.

Andaman & Nicobar Islands

- They are located at the East Coast of India in the Bay of Bengal & **form India's southeast border**.
- These group of Islands are surrounded by the Andaman Sea and have proximity to some South-East Asian countries like Malaysia, Myanmar, Thailand, Singapore, and Indonesia.
- The **Andaman and Nicobars are separated by the Ten Degree Channel** which is 150 km. wide.
- The **Great Nicobar Group of Islands** are home to the two most primitive tribes namely – **Nicobarese & Shompens**.
 - These islands also host the growth of coral reefs (the existence of which is threatened by the plastic debris & marine litter).
 - The island includes the **Great Nicobar Biosphere Reserve (GNBR)** which has been declared as one of the **World Network of Biosphere Reserves by UNESCO**. The reserve comprises of the Galathea National Park and the Campbell Bay National Park.

Note:

- The **Sundalands** which is one of the four **biodiversity hotspots in India** includes the Nicobar group of Islands.

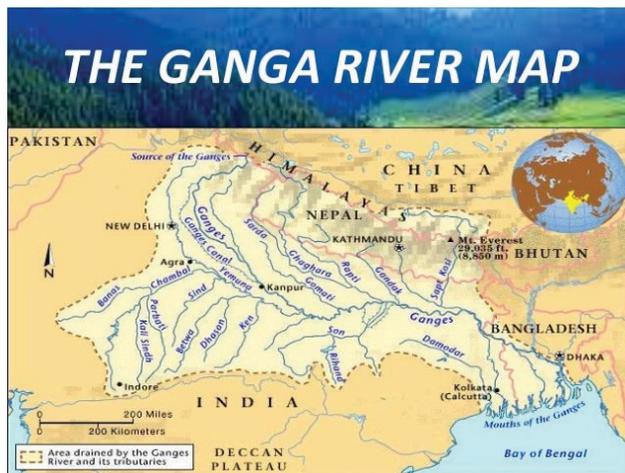
CSIR-Institute of Minerals and Materials Technology (IMMT)

- It was established on 13th April 1964 as Regional Research Laboratory, Bhubaneswar (Odisha) in the eastern part of India under the aegis of the Council of Scientific and Industrial Research (CSIR), New Delhi.
- It was renamed in 2007 with a renewed research focus and growth strategy, to be a leader in the areas of mineral & material resource engineering.

15 Point Directive to Clean Ganga

The National Mission for Clean Ganga (NMCG) has recently issued a **15-point directive** to the **11-Ganga basin states to prevent idol immersion into river Ganga and its tributaries**, including cordoning off the ghats.

- These directives were issued by **NMCG under Section-5 of the Environment (Protection) Act, 1986**.



- A **fine of Rs. 50,000** would be imposed if immersion of idols took place in the Ganga or its tributaries.
- The **Chief Secretaries** of the 11 states involved have been asked to submit an **action taken report within seven days** from the end of the festive season.

Initiatives to Prevent Ganga Pollution

- **Ganga Action Plan (1985):**

- It was the **first River Action Plan** that was taken up by the **Ministry of Environment & Forests**, to improve the water quality by the interception, diversion, and treatment of domestic sewage.
- It also aimed to prevent toxic and industrial chemical wastes (from identified polluting units) from entering the river.
- National River Conservation Plan was an extension to the Ganga Action Plan, so as to cover all the major rivers of the country.
- **Namami Gange Programme (2014):**
 - It was launched as an **Integrated Conservation Mission**, to accomplish the **twin objectives** of effective abatement of pollution, conservation, and rejuvenation of National River Ganga.
 - The program is being implemented by the **National Mission for Clean Ganga (NMCG)** and its state counterpart organization.
 - The main pillars of the programme are:
 - Sewerage Treatment Infrastructure & Industrial Effluent Monitoring,
 - River-Front Development & River-Surface Cleaning,
 - Bio-Diversity & Afforestation,
 - Public Awareness.
- **National Mission for Clean Ganga (NMCG), 2011:**
 - It is the implementation wing of the National Council for Rejuvenation, Protection, and Management of River Ganga also known as National Ganga Council (set in 2016; which replaced the NRGBA).
 - It has a **two-tier management structure** and comprises of Governing Council and Executive Committee.
 - It aims to maintain minimum ecological flows in the river Ganga with the aim of ensuring water quality and environmentally sustainable development.
 - **Ganga Manthan (2014)** was a **national conference** organized by NMCG to discuss issues and possible solutions for cleaning the river.
 - **Clean Ganga Fund (2014)** was also formed for cleaning up of the Ganga, setting up of waste treatment plants, conservation of biotic diversity of the river, and development of public amenities.
 - This fund will also be used to finance the National Mission for Clean Ganga (NMCG).

Note:

National River Ganga**Basin Authority (NRGBA), 2009**

- It was formed under **Section-3 of the Environment Protection Act, 1986.**
- It was **chaired** by the **Prime Minister of India.**
- It declared the Ganga as the 'National River' of India.

Gangetic River Dolphin Census

Recently, the annual Ganges river Dolphin census was undertaken by the [World Wide Fund for Nature- India](#) in collaboration with the Uttar Pradesh Forest Department along about 250 km. long riverine stretch of Upper Ganga river basin between Hastinapur Wildlife Sanctuary and Narora Ramsar site.

- This year the '**tandem boat survey method**' replaced the **previous years' direct counting method** in order to provide a more accurate count of the endangered species.
 - In the 'tandem boat survey' method, the officials use two inflated boats which move in tandem to count the dolphins. After collating the data, statistical tools are employed to arrive at the final count.
- The dolphin population in the region has **increased from 33 in 2018 to 36 in 2019.**

Ganga River Dolphin (*Platanista Gangetica*)

- The [Ganges river dolphin](#) is found in parts of the **Ganges-Meghna-Brahmaputra** and **Karnaphuli-Sangu** river systems in **India, Nepal, and Bangladesh.**
- The Gangetic river dolphin is **India's national aquatic animal** and is popularly known as '**Susu**'.
- It is also called a **blind dolphin** because it **doesn't have an eye lens** and **uses echolocation to navigate and hunt.**
- It is **among the four freshwater dolphins in the world-** the **other three** are:
 - The '**Baiji**' now likely extinct from the **Yangtze River in China,**
 - The '**Bhulan**' of the **Indus in Pakistan,** and
 - The '**Boto**' of the **Amazon River in Latin America.**
 - These four species live only in rivers and lakes.
- Its presence indicates the health of the riverine ecosystem.

Protection Status:

- [IUCN](#) Status: **Endangered**
- It is listed on [CITES Appendix-I.](#)
- It is classified under **Schedule 1, Wildlife (Protection) Act, 1972** providing absolute protection as offences under these are prescribed the highest penalties.
- **Vikramshila Gangetic Dolphin Sanctuary (VGDS)** in Bihar's Bhagalpur district is **India's only sanctuary** for its national aquatic animal.

World Wide Fund for Nature- India

- [WWF-India](#) is an international non-government organisation which was set up in 1969.
- It is the **country's largest voluntary body in the field of conservation.**
- It's secretariat is located in **New Delhi.**

Electric Vehicle Charging Guidelines and Specifications

Recently, the Government of India has approved amendments in Electric Vehicle (EV) charging guidelines and specifications.

- The guidelines include:
 - A **phase-wise installation** of charging infrastructure.
 - At least **one charging station** to be set up in a **grid of 3 km × 3 km** in the cities
 - **One charging station at every 25 km** on **both sides** of highways/roads.
 - **Fast charging station** at every **100 kms.**
 - **Private charging** at residences/offices to be managed by **DISCOMs.**
 - The **Public Charging Stations (PCS)** to be a **de-licensed** activity, implying that any individual/entity is free to set up public charging stations.
 - Freedom to PCS owners to install the chargers (various types and numbers) as per the market requirement.
 - The **tariffs to be charged** in accordance with the tariff policy issued under **Electricity Act 2003.**
 - **Bureau of Energy Efficiency (BEE)** will be the **Central Nodal Agency**, while State Nodal Agency for the respective states to be set up.
- The revised policy is expected to help for **Faster Adoption and Manufacturing of Hybrid & Electric Vehicles** in India.

Note:



Bureau of Energy Efficiency (BEE)

- The BEE is a statutory body under the Ministry of Power, Government of India.
- It assists in developing policies and strategies with the primary objective of reducing the energy intensity of the Indian economy.
- BEE coordinates with designated consumers, designated agencies, and other organizations to identify and utilize the existing resources and infrastructure, in performing the functions assigned to it under the Energy Conservation Act, 2001.

Faster Adoption and Manufacturing of Electric Vehicles (FAME) India

- FAME India Scheme was launched in 2015.
- It aims to support hybrid/electric vehicles market development and manufacturing ecosystem.
- The scheme has 4 focus areas i.e. Technology Development, Demand Creation, Pilot Projects and Charging Infrastructure.
- In 2019, the Government approved FAME-II, which is an expanded version of FAME-I.

India's First e-Waste Clinic

India's **first** e-waste clinic for segregating, processing and disposal of waste from household and commercial units will soon be set-up in **Bhopal, Madhya Pradesh**.

- A **Memorandum of Understanding (MoU)** was signed between the **Central Pollution Control Board (CPCB)** and the Bhopal Municipal Corporation (BMC) for its establishment.
- The **CPCB** will provide **technical support** at the unit.
 - This would ensure scientific handling and disposal of electronic waste generated from households and commercial establishments.
- The clinic is being conceived in compliance with the **Solid Waste Management Rules, 2016**.
 - These rules also focus on segregation of waste at source and charge user fees for collection, disposal, and processing from the bulk generator.
- In the absence of a safe disposal mechanism, currently, the electronic waste which includes defunct and useless electrical or electronic devices is being discarded along with other household waste.

Central Pollution Control Board (CPCB)

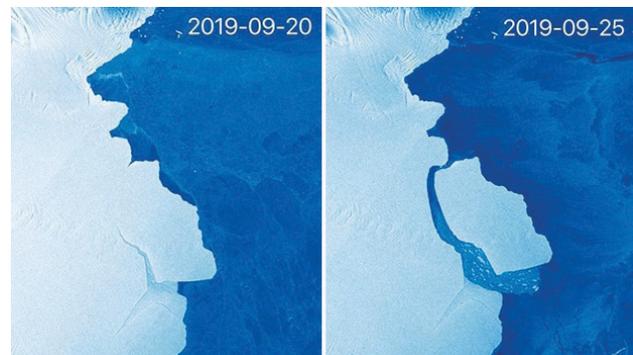
- It is a **statutory** organization that was constituted in **1974**.
- It is formed under the **Water (Prevention and Control of Pollution) Act, 1974**.
- CPCB was also entrusted with the **powers and functions** under the **Air (Prevention and Control of Pollution) Act, 1981**.
- Principal functions of the CPCB are to control and prevent water and air pollution.
- It also provides technical services to the Ministry of Environment and Forests regarding the provisions of the **Environment (Protection) Act, 1986**.

Solid Waste Management Rules 2016:

- These rules **replace the Municipal Solid Wastes (Management and Handling) Rules, 2000**, and are now applicable beyond municipal areas and have included urban agglomerations, census towns, notified industrial townships etc.
- They focus on segregation of waste at source, responsibility on the manufacturer to dispose of sanitary and packaging wastes, user fees for collection, disposal and processing from the bulk generator.

Massive Iceberg Breaks off Antarctica

Recently, the **Iceberg-D28** broke away from the **Amery ice shelf in Antarctica**.



- The **breaking of iceberg D28 is part of the normal cycle of ice shelves**, which are an extension of the ice cap thus the event is **not related to climate change**.
 - The shelf is essentially the floating extension of a number of glaciers that flow off the land into the sea.

Note:

- Thus ice streams maintain equilibrium by losing such bergs to balance the input of snow upstream.

Iceberg D28

- It is a part of the **Amery ice shelf** which is the **third-largest ice shelf in Antarctica**.
- The name **D28** comes from a **classification system** run by the **US National Ice Center**, which **divides the Antarctic into quadrants**.
 - The **D quadrant** covers the **longitudes 90 degrees East to 0 degrees**, the Prime Meridian.

Green Wall of India

The Centre is mulling an ambitious plan to create a **1,400km long and 5km wide green belt** from Gujarat to the Delhi-Haryana border.

- The plan is **inspired by Africa's 'Great Green Wall project**, running from **Senegal (West) to Djibouti (East)**, which came into effect in **2007**.
- The overarching objective of India's Green Wall will be to **address the rising rate of land degradation and the eastward expansion of the Thar desert**.
- The green belt being planned from **Porbandar to Panipat** will help in restoring degraded land through **afforestation along the Aravali hill range**. It will also act as a barrier for dust coming from the deserts in western India and Pakistan.
 - The **Aravali** has been identified as **one of the key degraded zones** to be taken up for greening under **India's target to restore 26 million hectares (mha) of its land**.
 - A **2016 report** from the **Indian Space Research Organisation (ISRO)** had also indicated that **Delhi, Gujarat and Rajasthan had already degraded over 50% of their land**.

Great Green Wall of Africa

- It aims to **restore Africa's degraded landscapes** and transform millions of lives in one of the world's poorest regions, the **Sahel**.
- The African initiative is **still only 15% complete**.
- Once fully completed, the Wall **will be the largest living structure on the planet** – an 8,000 km natural wonder of the world stretching across the entire width of the continent.

African countries **during the UNCCCD COP14 sought global support** in terms of finance to make the Wall a reality in the continent's Sahel region by 2030.

- Sahel is a **semiarid region of western and north-central Africa** extending from Senegal eastward to Sudan.
- It forms a **transitional zone** between the **arid Sahara (desert)** to the north and the belt of **humid savannas** to the south.



Aravali Mountain Range

- The Aravallis, is the **oldest fold mountains on Earth**. Geological studies show its age as three billion years.
- It spans over **800 km from Gujarat to Delhi (through Rajasthan and Haryana)**.
- The **highest peak** in the Aravalli Range is **Guru Shikhar** on Mount Abu.

Thar Desert

- The Thar Desert also called the **Great Indian desert** lies towards the **western margins of the Aravali Hills**.
- It is an undulating sandy plain covered with **sand dunes (mainly Barchans)**.
 - Barchans are **crested-shaped sand dune always facing the wind**. It is formed when a lot of sand is present in the desert. A steady wind from one direction is also needed.
- The region receives **very low rainfall below 150 mm per year**.
- It has an **arid climate** with low vegetation cover.
- **Luni is the only large river** in this region.

Note:

World Habitat Day

The United Nations has designated the **first Monday of October every year** as World Habitat Day.

- The **theme** for World Habitat Day **2019** is “**Frontier Technologies as an Innovative Tool to Transform Waste to Wealth**”.
 - Frontier technologies refer to automation, robotics, electric vehicles, renewable energy technologies, biotechnologies, and artificial intelligence which can transform social, economic and environmental spheres.
- The theme promotes innovative technologies for sustainable waste management to achieve **Sustainable Development Goal (SDG) 11**.
 - SDG 11 aims to make cities more inclusive, safe, resilient and sustainable.
- The global observation will be hosted by the **Government of Mexico for 2019**.
- The event focuses on the state of **human settlements and people’s right to sufficient shelter** as well as to remind people that they are responsible for the **habitat of future generations**.
- World Habitat Day was **first celebrated in 1986** with the **theme “Shelter is My Right”**.

Ganga Aamantran

The **Jal Shakti Minister** launched an initiative called '**Ganga Aamantran**' to connect with the stakeholders of the river.

- It is a pioneering exploratory **open- water rafting and kayaking expedition** on the Ganga river to be held between 10th October 2019 to 11th November 2019.
- The expedition was started at Devprayag (Uttarakhand) and will culminate at Ganga Sagar (West Bengal) covering the entire stretch of the Ganga River.
 - The expedition will encompass the **five Ganga basin states** that includes, Uttarakhand, Uttar Pradesh, Jharkhand, Bihar, and West Bengal.
- This is the **first-ever effort by National Mission for Clean Ganga** to raft across the entire stretch of the river.
- It is the **longest ever social campaign undertaken through an adventure sporting activity** to spread the message of river rejuvenation and water conservation on a massive scale.
 - The expedition is expected to draw focused attention to the ecological challenges being faced by Ganga.



Note:



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Art & Culture

Highlights

- *Rashtriya Sanskriti Mahotsav*
- *Chalukyan Rulers*
- *Paryatan Parv*
- *World Mental Health Day*

Rashtriya Sanskriti Mahotsav

- Recently, the **Ministry of Culture** organized the **10th edition of Rashtriya Sanskriti Mahotsav under the Ek Bharat Shrestha Bharat initiative in Madhya Pradesh** from 14th to 21st October 2019.
- The idea to organize such Mahotsav was **conceived in the year 2015** by the Ministry of Culture with an intention to **exhibit the rich cultural heritage of the country** in all its rich and varied dimensions namely, handicrafts, cuisine, painting, sculpture and performing arts- folk, tribal, classical and contemporary all at one place.
- The Rashtriya Sanskriti Mahotsav **will reconnect the people (especially the youth) with their indigenous culture**, its multifaceted nature, magnificence and historical importance in the context of 'India as a Nation' over the millennia.

Ek Bharat Shrestha Bharat

- It was launched in **2015** to promote engagement amongst the people of different States/UTs so as to enhance mutual understanding and bonding between people of diverse cultures, thereby securing stronger unity and integrity of India.
- It is an **initiative of the Ministry of Human Resource Development**.
- The broad objectives of the initiative are as follows:
 - To **CELEBRATE** the Unity in Diversity of our nation and to maintain and strengthen the fabric of traditionally existing emotional bonds between people.
 - To **PROMOTE** the spirit of national integration through a deep and structured engagement between all Indian states and Union Territories through a year-long planned engagement between states.

- To **SHOWCASE** the rich heritage and culture, customs and traditions of different states for enabling people to understand and appreciate the diversity that is India, thus fostering a sense of common identity,
- To **ESTABLISH** long-term engagements, and
- To **CREATE** an environment which promotes learning between states by sharing best practices and experiences.

Chalukyan Rulers

Recently, **graves of Chalukyan rulers** have been unearthed in a village near **Pattadakal, Karnataka**.

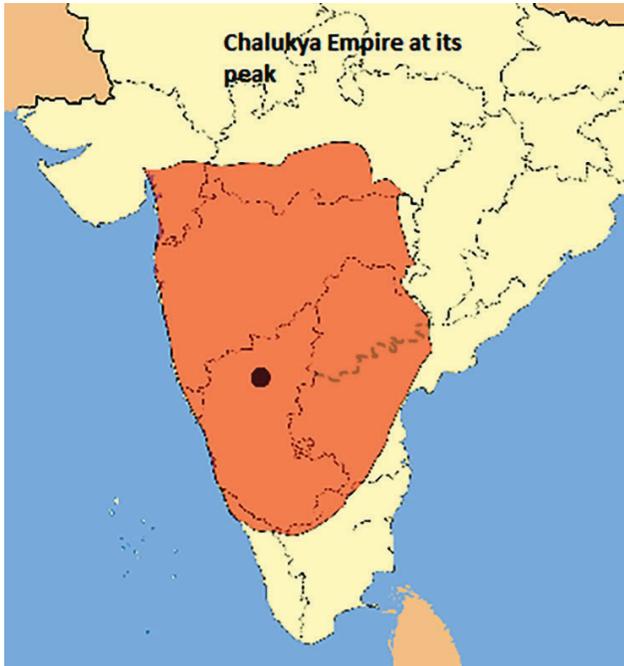
- The findings are significant since there are no clear details available of the places where Chalukyan rulers lived.
- It is believed that they wanted their death to remain a secret and to built their graves in a discreet manner.

Historical Background

- The Chalukyas **ruled parts of Southern and Central India** between the **6th century and the 12th century**.
- There were three distinct but related Chalukya dynasties.
 - **Badami Chalukyas:**
 - The earliest Chalukyas with their capital at **Badami (Vatapi)** in Karnataka.
 - They ruled from mid 6th century and declined after the death of their greatest king, Pulakesin II in 642 AD.
 - **Eastern Chalukyas:**
 - Emerged after the death of Pulakesin II in Eastern Deccan with capital at **Vengi** (a town in present day Andhra Pradesh).

Note:

- They ruled till the 11th century.
- **Western Chalukyas:**
 - Descendants of the Badami Chalukyas, they emerged in the late 10th century and ruled from **Kalyan**.
- The **extent of empire:**



- The Chalukya dynasty **reached its peak during the reign of Pulakesin II**.
- Pulakesin II subjugated the Kadambas, the Gangas of Mysore, the Mauravas of North Konkan, the Latas of Gujarat, the Malavas and the Gurjars.
 - He also succeeded in getting a submission from the Chola, Chera and Pandya kings.
 - He had also defeated King Harsha of Kannauj and the Pallava king Mahendravarman.
- **Administration and Society:**
 - The Chalukyas had **great army** comprised of infantry, cavalry, elephant unit and a dominant navy.
 - Though the Chalukya kings **were Hindus**, they were **tolerant of Buddhism and Jainism**.
 - They contributed to great developments in **Kannada and Telugu literature**.
 - Their **imprinted coins** included Nagari and Kannada legends.
 - They minted coins with cryptograms of temples, lion or boar facing right and the lotus.

- **Architecture:**
 - They built **cave temples** depicting both religious and secular themes.
 - The temples also had beautiful **mural paintings**.
 - The temples under the Chalukyas are a good example of the **Vesara style of architecture**.
 - **Vesara style** is a combination of Dravida and Nagara styles.
 - Temples in **Aihole, Badami and Pattadakal** are examples.

Paryatan Parv

The **Ministry of Tourism** inaugurated the nationwide Paryatan Parv-2019 to mark the 150th birth anniversary of Mahatma Gandhi.

- It aims to showcase the cultural diversity of the country and to spread the message of '**Tourism for All**'.
- The sustained efforts to promote tourism improved our world tourism ranking(from 65th in 2013 to 34th position in 2019).
 - The ranking was published in the **Travel & Tourism Competitiveness Report – 2019** released by the **World Economic Forum**.

Three Components of Paryatan Parv

- **Dekho Apna Desh:** To encourage Indians to travel their own country.
- **Tourism for All:** To organise tourism events at sites across all states in the country.
- **Tourism & Governance:** To organise interactive sessions & workshops with the help of concerned stakeholders on varied themes across the country as a part of the Paryatan Parv activities.

World Mental Health Day

The Department of Empowerment of Persons with Disabilities (DEPWD) under the **Ministry of Social Justice & Empowerment** observed the '**World Mental Health Day**' on **10th October 2019**.

- The **theme** of World Mental Health Day-2019 is '**Mental Health Promotion and Suicide Prevention**'.
 - According to the World Health Organization, **more than 8,00,000 people die by suicide every year**, making it the principal cause of death among

Note:

people in the age group of fifteen to twenty-nine years old.

- According to the National Mental Health Survey of India, 2016 the prevalence of mental disorders was 7.3% among 13-17 years old.
- The underlying idea behind the theme is to establish and form relevant strategies that can prevent suicide and promote the public's mental

health, as suicide is preventable and therefore, can be avoided.

- **World Mental Health Day** is organized by the **World Federation for Mental Health** (an **international membership organization** that was founded in **1948** with the aim to promote the advancement of mental health awareness & prevention of mental disorders).



Note:



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Social Issues

Highlights

- *Penicillin Revival to Fight Rheumatic Fever*
- *International Day of Older Persons*
- *World Sight Day*
- *Central Council of Health and Family Welfare Conference*
- *National Nutrition Survey*
- *India Country Cooperation Strategy 2019-2023*
- *UNHRC's Universal Periodic Review*
- *Meghalayan Minor Tribes Exclusion*

Penicillin Revival to Fight Rheumatic Fever

In a bid to fight drug resistance and tackle the prevalence of **rheumatic heart disease**, the Government of India is planning a revival of the drug named **Penicillin**.

Background

- **Penicillin** was the **first antibiotic** that was discovered in **1928** by **Alexander Fleming**.
- It is still the **first-line antibiotic drug** in **many western countries**.
 - This antibiotic was extensively used to treat **American soldiers' wounds in World War II**.
- In India, it **gradually went out of the markets** because of **unrealistic price control** measures of the government.
 - The prices of the **drug were kept so low** that the manufacturers stopped making the drug and Penicillin went out of production

Underlying Need

- India has a **high burden of rheumatic fever** and rheumatic heart disease which generally goes **undiagnosed** and leads to **many maternal deaths at the time of childbirth**.
 - Rheumatic fever is **endemic** in India and remains one of the **major causes of cardiovascular disease**, accounting for **nearly 25-45% of acquired heart diseases**.
- Population-based studies indicate the prevalence of rheumatic heart disease in India to be at a rate of about **2/1000 population**.

- Hence, the government is planning to procure penicillin **centrally for three years** and administer it to all children between **5-15 years**.
 - The drug will be dispensed through **primary health centres** or administered by **Accredited Social Health Activists (ASHA) workers**.

Maternal Mortality Ratio

- It is defined as the number of registered maternal deaths due to birth or pregnancy related complications during a given time period per 100,000 live births. In India, the MMR was 130/100,000 in 2016.

Rheumatic Fever

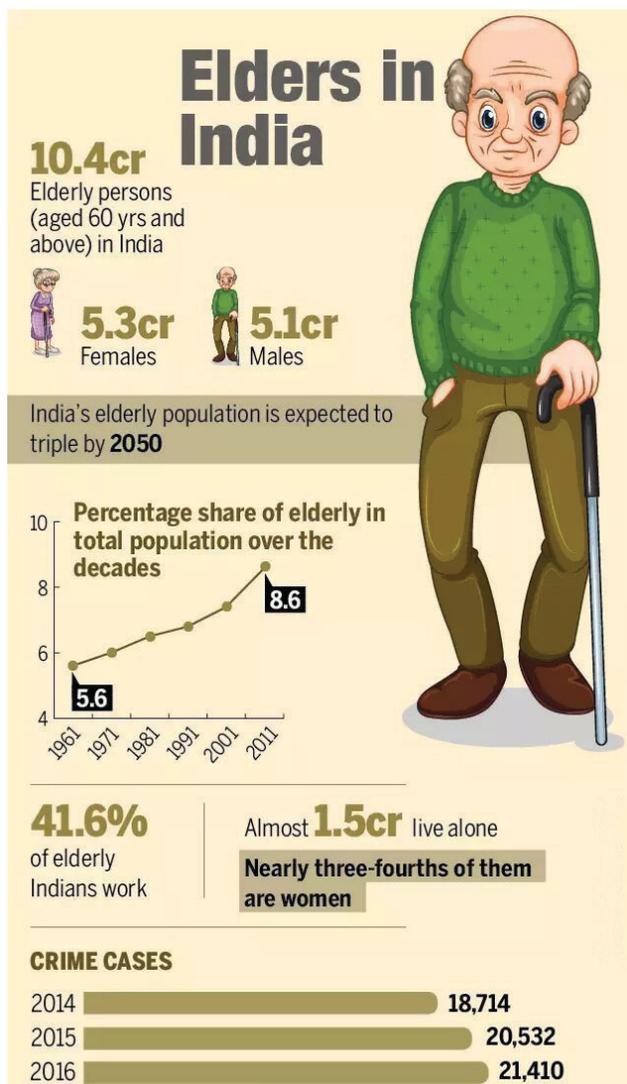
- It is an **inflammatory disease** that can develop as a complication of inadequately treated strep throat or scarlet fever.
- Rheumatic fever can cause **permanent damage to the heart, including damaged heart valves and heart failure**.
- Rheumatic fever is most common in **5-15 years old children**, though it can also develop in younger children and adults.
- Rheumatic fever can occur after **infection of throat with the bacterium** called **Group A streptococcus**.

International Day of Older Persons

The International Day of Older Persons is observed on **1st October** (**designated by the United Nations General Assembly in 1990**) every year.

- The theme for 2019 is '**The Journey to Age Equality**'
 - The theme is aligned with Sustainable Development Goal 10 (**SDG 10**) and focuses on pathways of

Note:



coping with existing and preventing future old age inequalities.

- **SDG 10** has the target to reduce inequality within and among countries and ensure equal opportunities for all.

Initiatives Taken by India

- **The Ministry of Social Justice and Empowerment** is the **Nodal Ministry** for matters relating to the **Senior Citizens**.
- **Integrated Programme for Senior Citizens:**
 - It is a central sector scheme.
 - It aims to improve the quality of life of the Senior Citizens by providing basic amenities.
- **Pradhan Mantri Vaya Vandana Yojana:**
 - It was launched in **2017**.

- It is aimed towards providing social security and to protect elderly people aged 60 and above against a future fall in their income due to uncertain market conditions.
- The scheme provides an assured return of 8% per annum for 10 years.
- **Maintenance and Welfare of Parents and Senior Citizens (MWPC) Act, 2007:**
 - It aims to ensure need-based maintenance for parents and senior citizens and their welfare.

World Sight Day

World Sight Day is an **annual day** of awareness held on the **second Thursday of October**, to focus global attention on blindness and vision impairment.

- This year it fell on **10th October 2019**.
- The theme for this year is **'Vision First'**.
- Globally, the **International Agency for the Prevention of Blindness (IAPB)** has a leadership role in preparing the annual World Sight Day.

World Vision Report

The **World Health Organization (WHO)** released its **first World Vision Report** on the day.

- Globally, over **2.2 billion people** have some form of **vision impairment**. Out of these 2.2 billion, 1 billion people are suffering from conditions that are preventable.
- The **burden** of eye conditions and vision impairment is often **far greater in people living in rural areas**, those with low incomes, women, older people, people with disabilities, ethnic minorities and indigenous populations.
- **India-Specific Findings:**
 - There was an **overall reduction in the prevalence of blindness** from 1.1% in 2001-02 to 0.45% during the years 2015-18.
 - The **rate of cataract surgery has increased nine-fold** (6,000 per million population) **between 1981 and 2012**.
 - This has been possible because of the **National Programme for Control of Blindness (NPCB)** under which cataract surgeries were performed on 6.5 million people alone in the year 2016-2017.
 - **National Programme for Control of Blindness and Visual Impairment** was launched in the

Note:

year 1976 as a 100% centrally sponsored scheme (now 60:40 in all states and 90:10 in NE states) by the Ministry of Health & Family Welfare.

- NPCB aims to provide for 'Eye Health for All' and prevention of visual impairment, through the provision of comprehensive universal eye-care services and quality service delivery.
- The goal of this programme is to reduce blindness to 0.3% by 2020.

➤ **Suggestions:**

- Making eye care an integral part of universal health coverage.
- Raising awareness, engaging and empowering people and communities about eye care needs.

Central Council of Health and Family Welfare Conference

- Recently, the 13th Conference of the Central Council of Health and Family Welfare (CCHFV) was inaugurated in New Delhi.
 - 'Surakshit Matritva Aashwasan (SUMAN)' for Zero Preventable Maternal and Newborn Deaths, its website and the grievance redressal portal were launched.
- CCHFV is an apex advisory body set up under Article 263 of the Constitution to provide support and advice to the Department of Health, Ministry of Health and Family Welfare on policy formulation and to consider and recommend broad lines of policy in regard to matters concerning health.
 - The Council is chaired by the Union Minister for Health and Family Welfare.
- Article 263 contemplates the establishment of an Inter-State Council to effect coordination between the Centre and states. Thus, the President can establish such a council if at any time it appears to him that the public interest would be served by its establishment.
- Therefore, the President has established the following councils to make recommendations for the better coordination of policy and action in the related subjects:
 - Central Council of Health.
 - Central Council of Local Government and Urban Development.
 - Four Regional Councils for Sales Tax for the Northern, Eastern, Western and Southern Zones.

National Nutrition Survey

The first-ever comprehensive National Nutrition Survey has been conducted by the Ministry of Health and Family Welfare and the United Nations Children Fund (UNICEF) to measure the level of malnutrition in India.

- The Comprehensive National Nutrition Survey is the largest micronutrient survey implemented globally to assess nutrient deficiency among children.

Key Findings

➤ **Breastfeeding:**

- 83% of children between 12 and 15 months are continued to be breastfed in the country.
- Breastfeeding is inversely proportional to household wealth.
- The rural children receive meals more frequently as compared to urban children.
- A higher proportion of children residing in urban areas (26.9%) are fed an adequately diverse diet as compared to those in rural areas (19%).

➤ **Iron Deficiency:**

- Children and adolescents residing in urban areas have a higher (40.6%) prevalence of iron deficiency compared to their rural counterparts (29%) due to a better performance of the government's health programmes in rural areas.

➤ **Vitamin D Deficiency:**

- Despite 74% of children living in cities consume dairy products as compared to 58% in rural areas; a higher deficiency of Vitamin D is found in urban areas.

➤ **Zinc deficiency:**

- The rural children lag in the intake of zinc which causes diarrhea, growth retardation, loss of appetite and impaired immune function.

➤ **Obesity:**

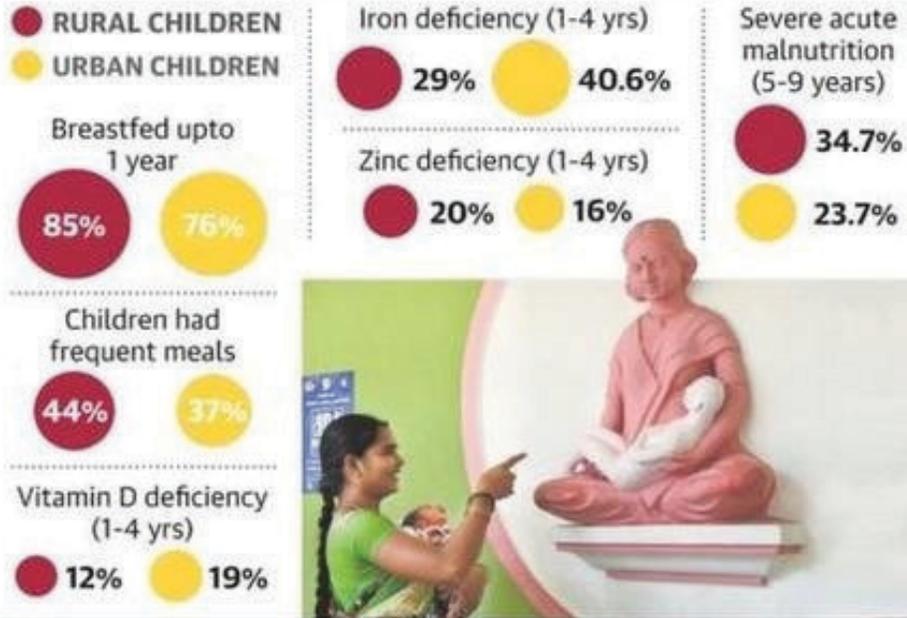
- 14.5% of children in the age group of 5 to 9 years in urban areas have higher Subscapular Skinfold Thickness (SSFT) than 5.3% in rural areas.
- Whereas 10.4% of adolescents surveyed in urban areas in the age group of 10-19 had higher SSFT than 4.3% in rural areas.
 - Subscapular Skinfold Thickness (SSFT) measurement is a reliable, cheap, simple, noninvasive method of body fat estimation at all ages including the neonatal period.

Note:



Food for thought

Diseases and deficiencies in Indian children sharply differ depending on their location of residence. Some data excerpts from the Comprehensive National Nutrition Survey released on Monday shows how problems in children differ according to the rural-urban divide



➤ Stunting:

- Overall 35% of Indian children aged 0-4 years were stunted.
- Rural areas witness a higher prevalence of stunting (37%) versus 27% in urban areas.
- Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh have a high (37-42%) stunting prevalence.
- The lowest prevalence of stunting (16-21%) was found in Goa and Jammu and Kashmir.

➤ Severe Acute Malnutrition:

- 32.4% in rural areas for adolescents in 10-19 years versus 27.4% in urban areas.
- Considering the overall scenario the rural parts of the country face a higher percentage of children suffering from stunting, underweight and wasting compared to urban parts of the country.
- The survey also reveals that Indian children are facing the double burden of malnutrition and rising risk of non-communicable diseases including diabetes, high cholesterol, chronic kidney disease, and hypertension.

- The Country Cooperation Strategy (CCS) is a **medium-term vision for WHO's cooperation with a given Member State.**
- The **four areas for strategic cooperation of WHO with India** include:
 - Universal Health Coverage (UHC).

WHO 'Triple Billion' Targets

- It is a strategic plan for the **next five years (2019-23).**
- It aims for
 - One billion more people to be benefitted from Universal Health Coverage (UHC).
 - One billion more people to be protected from health emergencies.
 - One billion more people to be covered for better health and well-being.

National Health Policy, 2017

- It aims to achieve **universal access to good quality health care services** without anyone having to face financial hardship as a consequence.
- It intends to gradually **increase public health expenditure to 2.5% of the GDP.**
- It proposes free drugs, free diagnostics, and free emergency and essential healthcare services in public hospitals.
- The policy advocates allocating two-thirds of resources to primary care.

India Country Cooperation Strategy 2019–2023

The Union Minister for Health & Family Welfare has launched 'the World Health Organisation India Country Cooperation Strategy 2019-2023: A Time of Transition'.

Note:



- Health and wellness by addressing the determinants of health.
- Protection against health emergencies.
- India's global leadership in health.
- The **India CCS** fully **aligns** itself with WHO '**triple billion**' targets, the Sustainable Development Goals (SDGs) and WHO South-East Asia Region's eight Flagship Priorities.
- It urges to **address emerging health scenario of the country** like **non-communicable diseases**, antimicrobial resistance, and air pollution, etc.
- The India CCS **also connects with India's National Health Policy 2017**, and other initiatives like **Ayushman Bharat**, National Viral Hepatitis Programme, **Eat Right India Movement**, the **Fit India Movement** and **Poshan Abhiyaan** that have collectively engaged with the people and enhanced the awareness about crucial health areas.

UNHRC's Universal Periodic Review

The government is forming a task force to prepare a **National Action Plan on Human Rights (NAPHR)** as mandated under the **UN Human Rights Council's (UNHRC) Universal Periodic Review (UPR)**.

- The task force will involve the **Union Home Ministry** and the **National Human Rights Commission (NHRC)** and have representatives from ministries such as **social justice and health**.
- UPR is a **state-driven** process under UNHRC's auspices and provides opportunities to member states to declare what actions they have taken to improve human rights and to fulfill their obligations.
 - A review cycle lasts **four-and-half years**, during which records of member states are reviewed.
- Earlier in 2017, India accepted 152 out of 250 recommendations on human rights.
 - Though India "**noted**" and **refused** to accept some recommendations, including those related to the **Armed Forces Special Powers Act and the Foreign Contribution Regulation Act**.
- Also, earlier, the UN had already recommended that India should have NAPHR.
 - NAPHR will help to mitigate the criticism India faces at the international level majorly about

human rights records as well as strengthen the social justice system.

United Nations Human Rights Council

- It is an inter-governmental body within the UN system responsible for strengthening the promotion and protection of human rights around the globe.
- It was created by the UN General Assembly on 15th March 2006 and replaced the UN Commission on Human Rights.

Armed Forces Special Powers Act (AFSPA)

- It gives armed forces the power to maintain public order in "**disturbed areas**".
 - A disturbed area is one that is declared by notification under Section 3 of the AFSPA. It can be invoked in places where the use of armed forces in aid of civil power is necessary.
- The government has the authority to prohibit a gathering of **five or more persons** in an area, can use force or even open fire **after giving a due warning** if they feel a person is in contravention of the law.

National Human Rights Commission

- NHRC is a multi-member body that consists of a Chairman and seven other members. Out of the seven members, three are ex-officio members.
- President appoints the Chairman and members of NHRC on recommendation of a high-powered committee headed by Prime Minister.
- The Chairperson and the members of the NHRC are appointed for 5 years or till the age of 70 years, whichever is earlier.
- They can be removed only on the charges of proved misbehavior or incapacity, if proved by an inquiry conducted by a Supreme Court Judge.

Meghalayan Minor Tribes Exclusion

Recently, the Government of Meghalaya has decided to exclude '**unrepresented tribes**' from the provisions of the **Sixth Schedule** of the Constitution.

- The **five minor tribes** namely, **Bodo-Kachari, Hajong, Koch, Mann, and Rabha** are clubbed together as '**unrepresented tribes**' for nomination in **Meghalaya's autonomous tribal councils**.

Note:

- These **minor tribes** are **indigenous to Meghalaya** and have been living in the state much before **its creation in 1972**.
- These tribal councils are in the names of **Garo, Jaintia, and Khasi district councils**, that form State's three major autonomous councils (predominantly the matrilineal communities).
- The Sixth Schedule makes special provisions for the welfare and advancement of the Scheduled Tribes and the tribal areas of the four states namely, **Assam, Meghalaya, Mizoram, and Tripura**.
 - The proposed amendment will deprive some of these Scheduled Tribes of their constitutional rights to be represented in the autonomous district councils.

Hajong Tribe

- The Hajong are tribal people, native to the Indian subcontinent mostly in the north eastern states and Bangladesh.
- Hajongs are predominantly the **rice farmers and perform endogamy**.

- They are **Hindus** and observe Hindu rites and customs.

Rabha Tribe

- They are indigenous **Mongoloid** community of **Nepal, Bhutan, Thailand, Myanmar, Bangladesh, and the Indian states of Assam, Meghalaya and West Bengal**.
- The **language/dialect** spoken by these people is mostly **Rabha** as well as **Assamese**.
- In Meghalaya, Rabhas are mostly found in **Garo Hills** districts.

Koch Tribe

- They are a **Tibeto-Burman ethnolinguistic** group of **Assam, Meghalaya, West Bengal and Bangladesh**.
- According to the census of 1881, Koch tribe belongs to a group of Bodo-Kachari people.
 - Bodo-Kachari is a generic term applied to a number of ethnic groups that are predominantly living in the Northeast Indian state of **Assam**.



Note:



Security

Highlights

- Exercise DharmaGuardian – 2019
- BRAHMOS Missile
- Nomadic Elephant-14
- Exercise Ekuverin
- 87th Air Force Day

Exercise Dharma Guardian – 2019

The **Joint Military Exercise "Dharma Guardian-2019"** between **India and Japan** will be conducted to share experience gained during various Counter-Terrorism Operations in respective countries.

- It is an **annual training event** which is **being conducted in India since 2018**.
- The scope of this exercise covers joint training on counter-terrorism operations in the jungle and urban scenario.
- The joint military exercise will enhance the level of defence co-operation as well as bilateral relations between the two nations.

BRAHMOS Missile

BRAHMOS **supersonic cruise missile** featuring Indian propulsion system, airframe, power supply and other major indigenous components has been successfully test-fired.

- BRAHMOS is a joint venture between the **Defence Research and Development Organisation of India (DRDO)** and the **NPO Mashinostroyeniya of Russia**.
- Brahmos is **named** on the rivers **Brahmaputra and Moskva**.
- It is a two-stage (solid propellant engine in the first stage and liquid ramjet in second) air to surface missile with a flight range of around 300 km.
 - However, India's entry into the **Missile Technology Control Regime (MTCR)** has extended the range of the BRAHMOS missile to reach 450-600 km, a shade above its current MTCR capped range of 300 km.

- Brahmos is a **multiplatform missile** which means it **can be launched from land, air, and sea**. It is a multi capability missile with pinpoint accuracy that works in both day and night irrespective of the weather conditions.
- It operates on the **"Fire and Forgets"** principle i.e it does not require further guidance after launch.
- Brahmos is one of the **fastest cruise missiles**, currently operationally deployed with speed of Mach 2.8, which is **3 times more than the speed of sound**.

Nomadic Elephant-14

The **India-Mongolia joint military exercise** is being held at **Bakloh, Himachal Pradesh**.

- It aimed at training troops in counter-insurgency & counter-terrorism operations under the United Nations mandate.
- The joint exercise will **enhance defence co-operation** and military relations between the two nations.



Exercise Ekuverin

The **tenth edition** of the Joint **Military Exercise Ekuverin**, between the **Indian Army and the Maldives**

Note:



National Defence Force, is being held from 7th-20th October, 2019 in Pune, Maharashtra.

- India and Maldives have been conducting this Exercise **Ekuverin**, meaning 'Friends' in the Maldivian language, since **2009**.
- The 14 days Joint Exercise is held **alternatively in India and Maldives**.
- It focuses on **enhancing interoperability** between the two forces for carrying out counter insurgency and counter-terrorism operations in a

semi-urban environment under the United Nations mandate.

- The **ninth edition** of the exercise was held in **2018 in Maldives**.

87th Air Force Day

The Defence Minister of India formally received the **first Rafale fighter jet (RB-001)** built for the Indian Air Force (IAF) in France on **8th October**, coinciding with **87th Air Force Day**.

- Rafale is a **twin-jet fighter aircraft** able to operate from both an aircraft carrier and a shore base.

87th Air Force Day

- The Indian Air Force was **officially established on 8th October 1932**.
- It is the **fourth largest air force** in the world after the US, Russia and China.
- Every year, the Air Force Day is celebrated at **Hindon Air Force and Station**. It is situated near **Ghaziabad (Uttar Pradesh)** is the **largest in Asia** and **8th largest in the world**.



Note:



Miscellaneous

Highlights

- Typhoon Hagibis
- Ancient River Unearthed in Uttar Pradesh
- Global Urbanization Shift
- Consumer App
- Elephant Endotheliotropic Herpesvirus
- Online Child Sexual Abuse Imagery
- Poisonous Fire Coral Fungus
- Nobel Prizes 2019
- Hindu-Kush-Himalayan Region
- World Standards Day

Typhoon Hagibis

The Japanese island of Honshu was hit by Typhoon Hagibis on 12th October 2019.



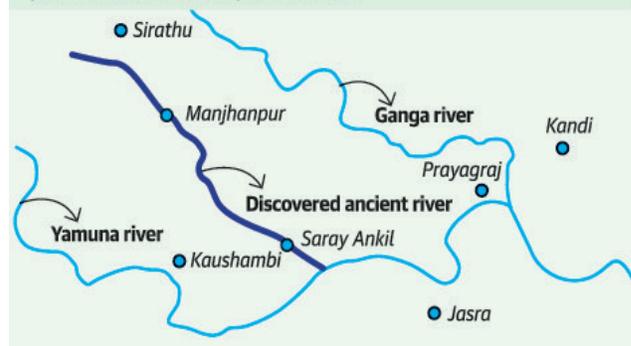
- Typhoon Hagibis could be the strongest storm to hit Japan since 1958.
- Hagibis, which means “speed” in the Philippine language, had packing winds of 180 km per hour near its centre.
- The storm brought record-breaking rainfall to many areas, resulting in floods and landslides in the country.
- Typhoon Ida, known as the “Kanogawa Typhoon” in Japanese, killed more than 1,000 people in September 1958. Ida had winds of 190 kmph when it hit the country.
- Typhoon is a region-specific name of the Tropical Cyclone (swirling system of clouds and thunderstorms that originates over tropical or subtropical oceans).
- In the Atlantic and Northeast Pacific, the term “hurricane” is used. The same type of disturbance in the Northwest Pacific is called a “typhoon” and in the South Pacific and the Indian Ocean, it is called “cyclone”.

Ancient River Unearthed in Uttar Pradesh

The Union Jal Shakti Ministry has excavated an old, dried-up river in the Prayagraj during geophysical survey covering the Prayagraj and Kaushambi region in Uttar Pradesh.

River unearthed

A team of scientists have discovered an “ancient buried river” that links the Ganga and the Yamuna. The map shows the possible course of the paleochannel



- The excavated river linked the Ganga and Yamuna rivers.
- The “Ancient Buried River” (buried paleochannel) is around 4 km wide, 45 km long and consisted of a 15-meter-thick layer buried under the soil.
- The genesis of these buried rivers followed a Report on Paleochannel on North-West India.
- The knowledge on subsurface connectivity between Ganga and Yamuna rivers will play a very crucial role in the planning of Ganga cleaning and protecting safe groundwater resources.

Note:

Palaeochannels

- A channel that is **no longer part of an active river system** and has ceased to be a conduit of water is commonly referred to as a palaeochannel.
- It occurs when rivers change their course either due to the **movement of tectonic plates** or **severe floods** and cut new ones.
- Some of the **palaeochannels lie buried under younger sediments**.
- Palaeochannels are commonly occurring landforms in alluvial landscapes, and have an economic significance because of their use in the exploration for freshwater resources, artificial recharge and storage of groundwater.
 - Additionally, they are of importance in the location and assessment of mineral deposits such as uraniferous ores, gold, silver and other placer deposits hosted in them.

Report on PaleoChannel on North-West India

- The report has been prepared by the **K.S. Valdiya Committee** under the **Ministry of Jal Shakti**.
- The report is based on the study of the land texture, piles of sediments, shapes and features of states of North-West India including – Rajasthan, Haryana, and Punjab.
- The found sediments are reminiscent of ones found in present-day Ghaggar, Ganga, and Yamuna.
- The report is an assertion of the assumption that River Saraswati originated from Adibadri in Himalaya to culminate in the Arabian Sea through the Runn of Kutch.
- The report also states that the river, once upon a time, was the lifeline of the North-Western states of India.

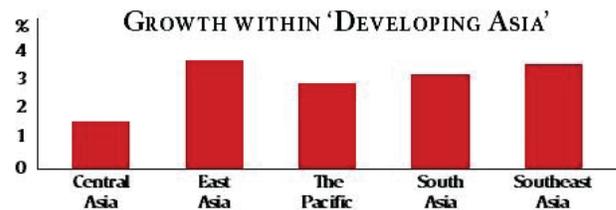
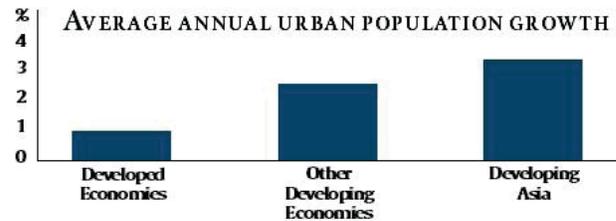
Global Urbanization Shift

According to the **Asian Development Outlook Report-2019**, the number of **urban inhabitants in developing Asia** has **increased** almost **five times** since **1970**.

- Asian Development Outlook Report is released by the **Asian Development Bank (ADB)**.
- It used the data from the **World Urbanization Prospects Report** that is released by the **Department of Economic and Social Affairs of the United Nations**.

Key Findings

- Between 1970 to 2017, the urban population in Developing Asia group of countries grew from 375 million to 1.84 billion.
 - The global **increase** in urban population led by this region accounted for approximately 53%.



- According to the report, **the Developing Asia group urbanized faster than the rest of the world** not only in terms of absolute growth but also in terms of the growth rate.
 - The urban population in this region increased at an average 3.4% per annum from 1970 to 2017.
 - This was much faster than the 2.6% in the rest of the developing world (mainly Africa and Latin America) and 1.0% in the developed world.

Asian Development Bank

- It is a regional development bank that aims to promote social and economic development in Asia.
- It was established in December 1966 and is headquartered in Manila, Philippines.
- Japan holds the largest proportion of shares in ADB followed by the USA.

Consumer App

Recently, the Ministry of Consumer Affairs, Food and Public Distribution has launched the **'Consumer App'** to **fast-track consumer grievance redressal process**.

- It will provide an effective forum for consumers to give their valuable suggestions to the department on consumer-related issues.

Note:

- The app aims to provide a **one-stop solution for consumer grievance redressal**.
- The registered consumer will be informed about their complaint via SMS/email with a unique number which can be tracked by the consumer.
- There will be a **time-bound resolution** of all grievances.
- Consumers can use this app in both **Hindi and English languages**.

Elephant Endotheliotropic Herpesvirus

Elephant Endotheliotropic Herpesvirus (EEHV) is a **rare disease** that has killed five elephants in Odisha.

- EEHV is a type of **herpes virus** that can cause a highly **fatal hemorrhagic disease in young Asian elephants** between the **ages of 1 and 12**.
 - If a young elephant dies before reproducing, it affects the population of the species as a whole in the concerned geography.
 - When EEHV is triggered, the elephant dies of massive internal bleeding and symptoms which are hardly visible, like reduced appetite, nasal discharge, and swollen glands.
- The disease is usually fatal, with a short course of **28-35 hours**.
- There is **no cure** for herpes viruses in **animals or in humans**.

Online Child Sexual Abuse Imagery

A new research has placed **India at the top of the list** of the countries from where the **maximum** number of reports (38.8 lakh) related to **suspected online Child Sexual Abuse Imagery (CSAI) originated**.

- According to the data, **India, Indonesia, and Thailand** account for 37% of online CSAI.
- The research was carried out by **Google and "Thorn" - an international anti-human trafficking organization**.
- The data shows that **68%** of reports related to abuse through **CSAI have emerged in Asia, 19% in the Americas, 6% in Europe, and 7% in Africa**.

Child Sexual Abuse Imagery (CSAI)

- It is any visual depiction of sexually explicit conduct involving a minor (a person less than 18 years old). It reflects the sexual abuse and exploitation of children in the online world.
- CSAI can be found virtually in any online realm other than videos and images.

Poisonous Fire Coral Fungus

One of the **world's deadliest species of fungi**, the **Poison Fire Coral**, has been identified growing in **Australia** for the **first time**.



- The Fire Coral fungus has its **native habitat** in the **mountains of Japan and Korea**.
 - Several people have died in Japan and Korea after mistaking these bright red fungi for edible mushrooms.
- Its **toxins** can even be absorbed **through the skin**.
 - If eaten, it causes symptoms such as stomach pain, vomiting, which are followed by the **skin peeling off the hands and feet**, and the **shrinking of the brain in the upcoming days**.

Nobel Prizes 2019

The **Nobel Foundation** has declared the complete list of winners for 2019.

- The **will** of the **Swedish scientist Alfred Nobel** established the **five Nobel prizes** in **1895** in the fields of **Chemistry, Literature, Peace, Physics, and Physiology or Medicine**.
- The **Nobel Foundation** is a **private institution** established in 1900, has **ultimate responsibility** for fulfilling the intentions in Alfred Nobel's will.

Note:

- The five Nobel prizes were **first awarded in 1901**.
- In his last will and testament, Alfred Nobel specifically **designated the institutions responsible for the prizes** he wished to be established:
 - The **Royal Swedish Academy of Sciences** for the Nobel Prize in **Physics and Chemistry**,
 - **Karolinska Institute** for the Nobel Prize in **Physiology or Medicine**,
 - The **Swedish Academy** for the Nobel Prize in **Literature**, and
 - A **Committee of five persons** to be elected by the **Norwegian Parliament (Storting)** for the **Nobel Peace Prize**.
- In 1968, Sveriges Riksbank established the **Sveriges Riksbank Prize in Economic Sciences** in memory of Alfred Nobel.
 - The **Royal Swedish Academy of Sciences** was given the task to select the Laureates in Economic Sciences starting in 1969.

Nobel Prize in Literature 2019

Austrian writer **Peter Handke** bagged the **2019 Nobel Prize for Literature**, and **Polish** author **Olga Tokarczuk** was named the winner for **2018**.

- **Last year**, the Swedish Academy (Stockholm), which awards the annual Nobel Prize for Literature, called off the ceremony owing to **allegations of sexual misconduct** within the Academy.
- **Handke** was awarded for "an influential work that with linguistic ingenuity has explored the periphery and the specificity of human experience".
 - The **choice of Handke created a controversy** for his alleged allegiance to Serbian nationalist sentiments and his sympathies for former Serbian resident Slobodan Milošević, whom more than one international agencies held responsible for the Bosnian genocide in which more than 8,000 people were murdered.
 - This whole issue has triggered the age-old question of **whether a writer should be judged for his works he represents or his personal biases and political leanings**.
- **Olga Tokarczuk** was awarded "for a narrative imagination that with encyclopedic passion represents the crossing of boundaries as a form of life".
 - She is **the 15th woman to win the Nobel literature prize since 1901**.

Nobel Prize in Chemistry 2019

The 2019 Nobel Prize in Chemistry has been **jointly awarded to John B Goodenough, M Stanley Whittingham and Akira Yoshino** for the **development of lithium-ion batteries**.

- In the early **1970s**, **Dr. Whittingham** developed the **first functional lithium battery**.
- **Dr. Goodenough** **doubled the lithium battery's potential**, creating the right conditions for a vastly more powerful and useful battery.
- **Dr. Yoshino** succeeded in eliminating pure lithium from the battery, instead **basing it wholly on lithium ions**, which are **safer than pure lithium**. This made the battery workable in practice.
- The result was a lightweight, hardwearing battery that could be charged hundreds of times before its performance deteriorated.
 - The advantage of **lithium-ion batteries** is that they are **not based upon chemical reactions** that break down the electrodes, but upon lithium ions flowing back and forth between the anode and cathode.
- The lithium-ion batteries have **reshaped energy storage and transformed cars**, mobile phones and many other devices in an increasingly **portable and electronic world**.

Nobel Prize in Physics 2019

The Nobel Prize for Physics was awarded to **James Peebles** for his **theoretical discoveries about the evolution of the universe** and to **Michel Mayor and Didier Queloz** for their **discovery of the first planet beyond our solar system** i.e. an **exoplanet**.

- **Peebles** was rewarded for laying a **foundation for modern cosmology**, including his realisation that **faint microwave radiation** that filled the cosmos 4,00,000 years after the Big Bang, contains crucial clues to what the universe looked like at the primitive stage and how it has evolved over the subsequent 13bn years.
 - He is credited with developing the theoretical tools that allowed scientists to perform a cosmic inventory of what the universe is made from, **showing that ordinary matter (such as stars, planets, living beings etc.) makes up just 5%, with the rest being dark matter and dark energy**.
- **Mayor and Queloz** have been recognised for their joint discovery in 1995 of the first **exoplanet (51 Pegasi b)**, 50 light years away in the **constellation of Pegasus**.

Note:



- The planet, **51 Pegasi b**, is a **gaseous ball about 150 times more massive than Earth** and has a scorching surface temperature of about 1,000 °C.

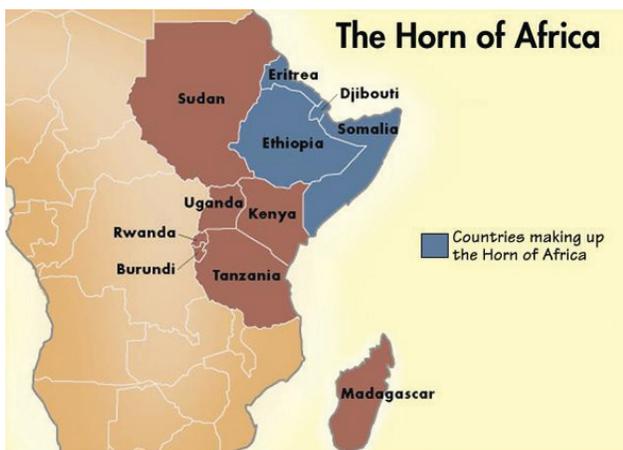
Nobel Prize for Peace 2019

The Nobel Peace Prize for 2019 has been awarded to **Abiy Ahmed Ali, the Prime Minister of Ethiopia** for his decisive initiative to **resolve the border conflict with neighboring Eritrea**.

- Abiy Ahmed Ali, the Prime Minister of Ethiopia ended 20 years war with neighboring country Eritrea.
- The two countries have resumed trade, diplomatic and travel ties and started “a new era of peace and friendship” in the **Horn of Africa**.

Historical Background of the Ethiopia-Eritrea conflict

- In 1993, Eritrea broke from its federation with Ethiopia, becoming an independent country, located strategically at the mouth of the Red Sea on the Horn of Africa.
 - Independence was the outcome of a 30-year war by Eritrean liberation fighters against Ethiopia, which had annexed the small multiethnic territory to its north in 1962.
- Just over five years after Independence, however, **war** broke out between the two countries **over the control of Badme — a border town** of no apparent significance.
- In June 2000, the two countries signed an **Agreement on the Cessation of Hostilities** followed by a Peace Agreement.
- The above **agreement** formally ended the war and **established a Boundary Commission** to settle the dispute.



- The Commission gave its “final and binding” ruling in 2002 and **Badme was awarded to Eritrea**.
- However, **Ethiopia refused** to accept the decision and the border issues kept erupting in clashes.
- The **Prime Minister Abiy Ahmed** broke the nearly two-decade stalemate, announcing that **Ethiopia would abide by the full terms of the 2000 agreement**.

Nobel Prize in Physiology/Medicine 2019

The Nobel Prize in Physiology or Medicine for 2019 was **jointly awarded to William G. Kaelin, Sir Peter J. Ratcliffe, and Gregg L. Semenza**, for ‘their discoveries on **how cells sense and adapt to oxygen availability**.’

- The discovery by scientists aims to **identify the molecular machinery** that regulates the **activity of genes in response to varying levels of oxygen** and understand **how underlying cells adapt** to such variations in oxygen supply.
- **Gregg L. Semenza** was awarded the Prize for the discovery of **Hypoxia-Inducible Factor-1 (HIF-1) protein**.
 - This protein is responsible for switching genes on and off in response to low oxygen levels in the cells.
- **Sir Peter J. Ratcliffe** (Professor at Oxford University), earned his share of the Prize for **discovering a mechanism common to all cells of the human body**.
 - When oxygen levels are low in the cells, this mechanism signals the kidneys to produce more red blood cells, which carry the vital molecule throughout the body.
- **William G. Kaelin** (Professor at Harvard University) received the Prize for his work investigating a genetic syndrome called **Von Hippel-Lindau’s (VHL) disease**.
 - He found that the gene behind VHL encodes for a protein that seems to prevent cancer and was implicated in its response to low oxygen levels.
 - This **discovery was eventually tied to HIF-1** and gave potential understanding to **treat a range of conditions like cancer, diabetes, and coronary artery disease**.

Nobel Prize in Economic Sciences 2019

The Nobel Prize in Economic Sciences for 2019 was **jointly awarded to Abhijit Banerjee, Esther Duflo, and Michael Kremer**, for ‘their **experimental approach to alleviating global poverty**.’

- This year’s laureates have introduced a **new approach** to obtain reliable answers about the best ways to fight

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global poverty. Their approach **divides the larger issue into smaller ones** that could be easily examined to find out the solution to the problem.

- The three adopted an evidence-based approach to apply their theory to real-life situations using randomized trials and then assessing the outcomes.
 - For instance, they found that in India, despite immunization being free, women were not bringing in their children for the vaccination shot. The two economists Abhijit Banerjee & Esther Duflo decided to give a bag of pulses free to women who brought their babies for vaccination. This freebie policy soon spread and the rate of immunization shot up in the region.
- Their field-work based approach has **revolutionized the field of development economics and made it more relevant in policymaking**.
- **Esther Duflo** has become the **second woman to win the prize after Elinor Ostrom** of the USA (in 2009). She is also the **youngest ever** to win the prize.

Hindu-Kush-Himalayan Region

The India Meteorological Department (IMD) will **collaborate** with meteorological agencies in **China and Pakistan**, among others, to provide **climate forecast services** to countries in the Hindu-Kush-Himalayan Region.



Hindu-Kush-Himalayan Region

- The HKH region spans Afghanistan, Bangladesh, Bhutan, China, India, Kyrgyzstan, Mongolia, Myanmar, Nepal, Pakistan, Tajikistan, and Uzbekistan.

- It is considered the **Third Pole** (after the North and South Poles) and has significant implications for climate.
- A recent report by the **Intergovernmental Panel on Climate Change** has highlighted the **threat to the HKH region from global warming**.
 - Floods would become more frequent and severe in the mountainous and downstream areas of the Indus, Ganges and Brahmaputra river basins, because of an increase in extreme precipitation events.

India Meteorological Department

- It is the principal agency under the **Ministry of Earth Sciences (MoES)**.
- It operates hundreds of observation stations **across India and Antarctica**.
- It is **one of the six Regional Specialised Meteorological Centres of the World Meteorological Organization**.
- It also has the responsibility of forecasting, naming and distribution of warnings for tropical cyclones in the Northern Indian Ocean region, including the Malacca Strait, the Bay of Bengal, the Arabian Sea and the Persian Gulf.

World Meteorological Organization

- It is an intergovernmental organization with a membership of **193** Member States and Territories.
- Established by the ratification of the WMO Convention in 1950, WMO became the specialized agency of the United Nations for meteorology (weather and climate), operational hydrology and related geophysical sciences.
- It is **headquartered in Geneva, Switzerland**.

World Standards Day

14th October is celebrated as World Standards Day every year for paying tribute to the collaborative efforts of thousands of experts worldwide who develop the **voluntary technical agreements** that are **published as International Standards**.

- It has been officially **celebrated since 1970**.
- The **theme** for 2019 is **'Video Standards Create a Global Stage'**, on standardizing the video compression technologies.
- In India, it is **celebrated by the Bureau of Indian Standards (BIS)**.

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Bureau of Indian Standards

- It is the **National Standard Body of India** established under the BIS Act 2016 for the harmonious **development of the activities of standardization,**
- marking and quality certification of goods and for matters connected therewith or incidental thereto.
- It has its headquarters in **New Delhi.**



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Key Points

Details

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Summary

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