



# drishti

## News Analysis (02 May, 2020)

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## R&D Statistics and Indicators 2019-20

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### Why in News

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According to the Research & Development (R&D) Statistics and Indicators 2019-20 report, India's gross expenditure in R&D has tripled between 2008 & 2018 and scientific publications have risen placing the country internationally among the top few.

- The R&D Statistics and Indicators 2019-20 is based on the **national S&T survey 2018** brought out by the **National Science and Technology Management Information (NSTMIS)**.
- The report on R&D indicators for the nation is an **important document for the**
  - Evidence-based policymaking and planning in higher education,
  - R&D activities and support,
  - Intellectual property,
  - Industrial competitiveness.

### Key Findings of the Report

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- According to the report, **R&D is driven mainly by the government sector.**

- **Expenditure on R&D:**
  - The **Gross Expenditure on R&D (GERD)** of India **nearly tripled** between 2007-08 to 2017-18.
  - India's **per capita R&D expenditure** has also increased by **1.5 times**.
  - Increase in **Extramural R&D support** by central Science & Technology agencies.
    - **Women participation** in extramural R&D projects has also increased significantly to 24% in 2016-17 from 13% in 2000-01.
    - These **extramural expenditures** are the expenditures on R&D that is performed abroad but financed by domestic institutions.
  - **India spent 0.7% of its GDP on R&D in 2017-18**, While the same among other developing **BRICS countries** was Brazil 1.3%, Russian Federation 1.1%, China 2.1% and South Africa 0.8%.
- **Researchers and scientific publications:**
  - The **number of researchers** per million populations **has doubled** since 2000.
  - India occupies 3<sup>rd</sup> rank in terms of number of **Ph.D awarded in Science and Engineering (S&E)** after USA and China.
  - India is placed **3<sup>rd</sup> among countries in scientific publication** as per NSF database.
- **Patent filing:**

India is ranked at **9<sup>th</sup> position in terms of Resident Patent Filing** activity in the world.

  - During 2017-18 out of total patents filed in India, 32% patents were filed by Indian residents.
  - Patent applications filed in India are dominated by disciplines like Mechanical, Chemical, Computer/Electronics, and Communication.
- According to the **World Intellectual Property Organisation (WIPO)**, India's Patent Office stands at the **7<sup>th</sup> position** among the top 10 Patent Filing Offices in the world.

## **National Science and Technology Management Information**

- The National Science and Technology Management Information System (NSTMIS) is a **division of the Department of Science and Technology (DST)**.
- It has been entrusted with the task of building the information base on a continuous basis on resources devoted to scientific and technological activities for policy planning in the country.

**Source: PIB**

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Open Budget Survey 2019: IBP

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Why in News

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Recently, the **International Budget Partnership (IBP)** has released an **Open Budget Survey (OBS) 2019**.

The survey evaluates each country on the basis of the availability of key budget documents of the Central or Federal Government, and assesses whether these are made public, in a timely manner, and provide comprehensive information.

### Open Budget Survey

- The Open Budget Survey is **part of the International Budget Partnership's Open Budget Initiative**, a global research and advocacy program to promote public access to budget information and the adoption of accountable budget systems.
- It is a **biennial** survey.
- The survey covers **117** countries.
- It rates the level of budget transparency across countries on a **scale of 0-100**, based on several normative, internationally comparable indicators.

### Key Findings

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- **Global Scenario:**
  - **Improvement in Overall Score:** OBS 2019 finds a **modest global improvement** in budget transparency, which is consistent with the overall trend measured by the survey over the past years.
  - **Global Avg. Transparency Score:** The **global average transparency score** has turned out to be **45 out of 100** and thus levels of publicly available budget information remains limited.
  - **Top Scorers: New Zealand tops** the chart with a **score of 87**.  
Further, South Africa (87), Mexico (82) and Brazil (81) are among the top six countries providing extensive information to the public for scrutiny.
  - **Citizens' Participation:** The citizens' participation in the budget process continued to be at a dismal level and thus average global scores on the OBS participation measure remains **14 out of 100**.
  - **Publication of Audit and Legislative Reports:** Only 30 of the 117 surveyed countries have adequate scores both for audit and for legislative oversight.

- **Indian Scenario:**

- **India's Global Ranking:** India has been placed at **53<sup>rd</sup>** position among 117 nations in terms of budget transparency and accountability.

- **Transparency Score:** India's Union Budget process has a **transparency score of 49 out of 100**, which is **higher than the global average of 45**.

Some of the other large developing countries, with the exception of China, have got much higher transparency scores compared to India.

- **Citizens' Participation:** The public participation in its budgets has been flagged as an area of improvement required for India.

- **Publication of Audit Reports:** India performs well in publishing timely and relevant information in the audit reports and in-year reports and has scored well and above many other countries.

- **Publication of Pre-Budget Statement:** The absence of a published Pre-Budget Statement and not bringing out a Mid-Year Review in 2018-19 pulled down the transparency score for the Union Budget of India.

## Way Forward

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- While many governments and citizens have embraced the open budgeting agenda, more efforts to translate good intentions into better practice are required.
- A global effort of joint, sustained activism is needed to accelerate progress and deliver the promises of open budgeting to all citizens.

## International Budget Partnership

- The International Budget Partnership (IBP) is a **collaborative effort of multiple actors** – including civil society, state actors, international institutions and the private sector.

- IBP was **formed in 1997** to promote transparent and inclusive government budget processes as a means to improve governance and service delivery in the developing world.

- It intends to bring citizens participation in open, inclusive budgeting processes to shape policies and practices that promote equity and justice on a sustainable basis.

IBP's focus on citizens and civil society organizations (CSOs) was driven by the pioneering civil society budget monitoring efforts in a small number of middle-income countries in the early 1990s.

- IBP's ultimate aim is to ensure that public resources are used more effectively to fight poverty and promote equitable and sustainable development in countries around the world.

## Source:BS

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# Forex Reserves

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## Why in News

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According to the recent data from the **Reserve Bank of India**, India's **Foreign Exchange (Forex) reserves declined by \$113 million** to \$479.45 billion in the week to 24 April, 2020 due to a fall in **foreign currency assets**.

## Key Points

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- **Changes in forex reserves holdings.**
  - The **foreign currency assets (FCAs)** decreased by \$321 million to \$441.56 billion.
  - **Gold reserves** rose by \$221 million to \$32.901 billion.
  - The **special drawing rights** with the International Monetary Fund (IMF) fell by \$6 million to \$1.42 billion.
  - The country's **reserve position with the IMF** also was down by \$8 million to \$3.57 billion.
- Earlier, the reserve **had touched a life-time high of \$487.23** billion in the week ended by 6 March, 2020.
- During 2019-20, the country's foreign exchange reserves rose by almost \$62 billion.

## Foreign Exchange Reserves

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- Foreign exchange reserves are **assets held on reserve by a central bank in foreign** currencies, which can include bonds, treasury bills and other government securities.  
It needs to be noted that most foreign exchange reserves are held in U.S. dollars.
- These assets serve many purposes but are most significantly held to ensure that the central bank has backup funds if the national currency rapidly devalues or becomes altogether insolvent.
- **India's Forex Reserve include:**
  - Foreign Currency Assets
  - Gold reserves
  - Special Drawing Rights
  - Reserve position with the **International Monetary Fund (IMF)**

## Foreign Currency Assets (FCA)

- FCAs are assets that are valued based on a currency other than the country's own currency.
- FCA is the **largest component of the forex reserve**. It is expressed in dollar terms.

- The FCAs include **the effect of appreciation or depreciation of non-US units** like the euro, pound and yen held in the foreign exchange reserves.

### Special drawing rights (SDR)

- The SDR is an **international reserve asset**, created by the IMF in 1969 to supplement its member countries' official reserves.
- The SDR is neither a currency nor a claim on the IMF. Rather, it is a potential claim on the freely usable currencies of IMF members. SDRs can be exchanged for these currencies.
- The value of the SDR is calculated from a weighted basket of **major currencies**, including the U.S. dollar, the euro, Japanese yen, Chinese yuan, and British pound.
- The interest rate on SDRs or (SDRi) is the interest paid to members on their SDR holdings.

### Reserve Position in the International Monetary Fund

- A reserve tranche position implies a **portion of the required quota of currency each member country must provide to the International Monetary Fund (IMF)** that can be utilized for its own purposes.
- The reserve tranche is basically **an emergency account** that IMF members can access at any time without agreeing to conditions or paying a service fee.

### Source: IE

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## Demo-2 Mission

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### Why in News

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**National Aeronautics and Space Administration (NASA)** and **SpaceX** are all set for the **Demo-2 mission** which is scheduled for 27<sup>th</sup> May, 2020 from the **Kennedy Space Center** in Cape Canaveral, Florida, USA.

Demo-2 Mission will send astronauts to the **International Space Station** (ISS).

### Key Points

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- Under the Mission, astronauts **Robert Behnken** and **Douglas Hurley** will dock with ISS and then remain there for between one to four months, depending on the time of next mission.
- It is a part of NASA's **Commercial Crew Program**, which is a partnership to develop and fly human space transportation systems.

- **SpaceX spacecraft** named **Crew Dragon** will be used to take them into space.  
It will be only the **fifth class of US spacecraft** to take human beings into orbit, after the **Mercury, Gemini, Apollo** and **Space Shuttle** programs.
- It is a **high priority mission** for the US which is clear by the fact that the mission is being carried out amidst **Covid-19** pandemic.
- The mission is a **major milestone for SpaceX**, which is a private company founded by **Elon Musk**, who is the founder of **Tesla**.  
It has established itself as the leader in the private space sector mainly due to its **reusable rocket**, the **Falcon 9**.
- NASA classifies the **impact of space flight on humans** in 5 broad criteria known as **5 Hazards**. These are:
  - Radiation
  - Isolation and confinement
  - Distance from Earth
  - Gravity
  - Hostile/closed environments
- **Health Specific Impacts:**
  - Weightlessness and osteoporosis
  - Telomeres get longer during spaceflight
  - Decreased body mass and increased folate in orbit
  - Spaceflight can Trigger Gene Mutations

### **Project Mercury (1958-63)**

- It was the **first US man-in-space program**.
- The **objectives** of the program, which made **six manned flights** from 1961 to 1963, were specific:
  - To orbit a manned spacecraft around Earth.
  - To investigate man's ability to function in space.
  - To recover both man and spacecraft safely.

### **Gemini Program (1962-66)**

- Designed as a **bridge between the Mercury and Apollo** programs, it primarily tested equipment and mission procedures and trained astronauts and ground crews for future Apollo missions.

- **Four main goals:**

- To test an astronaut's ability to fly long-duration missions (up to two weeks in space).
- To understand how spacecraft could meet and dock in orbit around the Earth and the moon.
- To perfect re-entry and landing methods.
- To further understand the effects of longer space flights on astronauts.

### **Apollo Program (1963-72)**

- It was **designed to land humans on the Moon** and bring them safely back to Earth.
  - Six of the missions (**Apollos 11, 12, 14, 15, 16, and 17**) achieved this goal.
  - These missions returned with **scientific data** and almost 400 kilograms of **lunar samples**.
- **Apollo 8** was the **first manned mission** to go to the **moon**. This mission **did not land on the moon**. It **orbited** the moon, then came back to Earth.
- **Apollo 11** was the **first moon landing mission**. It landed on **20<sup>th</sup> July, 1969**. The crew of Apollo 11 was **Neil Armstrong, Michael Collins and Buzz Aldrin**.

### **Space Shuttle Program (1981-2011)**

- NASA's **space shuttle fleet**, Columbia, Challenger, Discovery, Atlantis and Endeavour, flew 135 missions and **helped construct the ISS**.
- The spacecraft carried people into orbit repeatedly, launched, recovered and repaired satellites, conducted cutting-edge research and built the largest structure in space.
- The **final space shuttle mission, STS-135**, ended on **21<sup>st</sup> July, 2011**.
- As **humanity's first reusable spacecraft**, the space shuttle pushed the boundaries of discovery ever farther, requiring not only advanced technologies but the tremendous effort of a vast workforce.

**Source: HT**

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## Concerns Over Use of BCG Vaccine: WHO

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### Why in News

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The **World Health Organization** (WHO) has highlighted a few critical issues over the use of **BCG vaccine** for **Covid-19**.

BCG, or bacille Calmette-Guerin, is a vaccine for **tuberculosis (TB) disease**.

### Key Points



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- WHO emphasizes the importance of **randomised controlled trials** of the vaccine to understand its safety and efficacy before using it on healthcare workers.  
Randomised controlled trials using BCG vaccine are **under way in the Netherlands and Australia** to find out whether the vaccine can reduce the incidence and severity of Covid-19.
  - **According to an earlier study**, there is an association between countries that have a universal BCG vaccination and reduced coronavirus cases.
    - It **argues** that countries that have **deployed the BCG vaccine in their immunisation programmes have seen fewer deaths from Covid-19.**
    - The BCG vaccine **enhances the innate immune response** to subsequent infections which might reduce viral load after Covid-19 exposure, with a consequent less severe Covid-19 and more rapid recovery.
  - **Views in India:**
    - According to the **Translational Health Science and Technology Institute (THSTI)**, Faridabad, the vaccine can prevent intracellular infections, so its protective effects against Covid-19 is a **biologically plausible hypothesis.**
    - It will be premature for India, that has had a consistent TB vaccination policy since 1968, to take comfort from the study.
  - **Five reasons** countries should wait for the results of the BCG vaccine randomised controlled trials:
    - The **association** of fewer Covid-19 cases in countries that have a universal BCG vaccination programme is **based on population** rather than individual data.
    - The benefits of the BCG vaccine given at birth are **unlikely to reduce the severity of Covid-19 decades later.**  
The beneficial effects of the BCG vaccine **might be altered by subsequent administration of a different vaccine** and become less effective after longer periods.
    - There is a **remote possibility** that the BCG vaccine **ramps up the immune system leading to worsening** of Covid-19 in a small population of patients with a severe disease.  
**Coronavirus** induces **cytokine storm** in some patients, leading to further complications and even death.
    - If BCG vaccination is not effective against the **novel coronavirus**, it is likely to give a **false sense of security to people**, especially during the **pandemic.**
    - Using the vaccine without evidence of its benefits could further **jeopardise the already short supply of the BCG vaccine.**

**Source: TH**

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## Why in News

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The **CSIR-Central Road Research Institute (CSIR-CRRI)**, New Delhi has **developed the Kisan Sabha App** to connect farmers to the supply chain and freight transportation management system.

The app also intends to provide a robust supply chain management required to facilitate the timely delivery of the products at the best possible prices during the present situation of **Covid-19**.

## Key Points

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- **Aim:**
  - Kisan Sabha aims to provide the **most economical and timely logistics support to the farmers.**
  - It also intends to **increase the profit margins** for farmers by minimizing interference of middlemen and directly connecting with the institutional buyers.
  - It will also help in providing best market rates of crops by comparing nearest mandis, booking of freight vehicles at cheapest cost thereby giving maximum benefit to the farmers.
- **Stakeholders Involved:**

The app connects the farmers, transporters, Service providers (like pesticides/ fertilizer/ dealers, cold store and warehouse owner), mandi dealers, customers (like big retail outlets, online stores, institutional buyers) and other related entities for a timely and effective solution.
- **Function:**
  - It acts as a **single stop for every entity related to agriculture**, be they a farmer who needs better price for the crops or mandi dealer who wants to connect to more farmers or truckers who invariably go empty from the mandis.
  - Kisan Sabha also **provides a platform for people who want to buy directly from the farmers.**

### **CSIR-Central Road Research Institute (CSIR-CRRI)**

- The Central Road Research Institute (CRRI) was established in 1952 as a constituent laboratory of the **Council of Scientific and Industrial Research (CSIR)**.
- It is located in Delhi.
- It is the **premier national research organization for highways traffic and transport planning** and all other allied aspects.
- It carries out R&D in the areas of road and road transportation and provides the highest level of professional consultancy.

**Source:PIB**

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# China to Launch Official Digital Currency

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## Why in News

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Recently, China has started testing its official digital currency which is **unofficially called “Digital Currency Electronic Payment, DC/EP”**.

## Key Points

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- The digital currency of China **has not been officially released** but internal pilot tests are being carried out in four cities of China.
- China is expected to officially make the sovereign digital currency available to the public later in 2020.
- It could be considered the **world’s first Central Bank Digital Currency (CBDC) if it is officially issued** by state bank People’s Bank of China.
- The total size of China’s digital currency could reach one trillion yuan (\$140 billion), equivalent to about one-eighth of China’s cash.

## Digital Currency

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- Digital currency is a payment method which **exists only in electronic form and is not tangible**.
- Digital currency can be transferred between entities or users with the help of technology like computers, smartphones and the internet.
- Although it is similar to physical currencies, digital money allows borderless transfer of ownership as well as instantaneous transactions.
- Digital currency is also known as digital money and cybercash.
- E.g. Cryptocurrency

## Cryptocurrency

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- A **cryptocurrency** is a digital or virtual currency that uses cryptography for security.
- Cryptocurrencies use decentralized technology to let users make secure payments and store money without the need to use their name or go through a bank.
- They run on a distributed public ledger called **blockchain**, which is a record of all transactions updated and held by currency holders.
- The most common cryptocurrencies are Bitcoin, **Libra**, Ethereum, Ripple, and Litecoin.

## India’s Stand on Digital Currency

- The **Reserve Bank of India (RBI) had banned cryptocurrencies in 2018.**
  - RBI had considered cryptocurrencies as a poor unit of account and also demonstrated by their frequent and high fluctuation in value.
  - RBI also stated that it pose several risks, including anti-money laundering and terrorism financing concerns (AML/CFT) for the state and liquidity, credit, and operational risks for users.
  - It had also said that it would seriously **consider developing a sovereign digital currency** when the time is appropriate
- Subsequently, **the Supreme Court has struck down a circular of the RBI**, which bans financial institutions from enabling deals in digital or cryptocurrencies.  
The ban was challenged by the Internet & Mobile Association of India (IAMA) sighting that dealing and trading in cryptocurrency was a legitimate business activity and that the RBI did not have jurisdiction over it as these assets could be classified as commodities rather than currency.

**Source:HT**

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## Bengaluru Bannerghatta Biological Park

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### Why in News

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**Bengaluru's Bannerghatta Biological Park (BBBP), Karnataka** has come out with the **Animal Adoption Programme** to conserve wildlife and allow people to **adopt animals** at the zoo during the **lockdown** period.

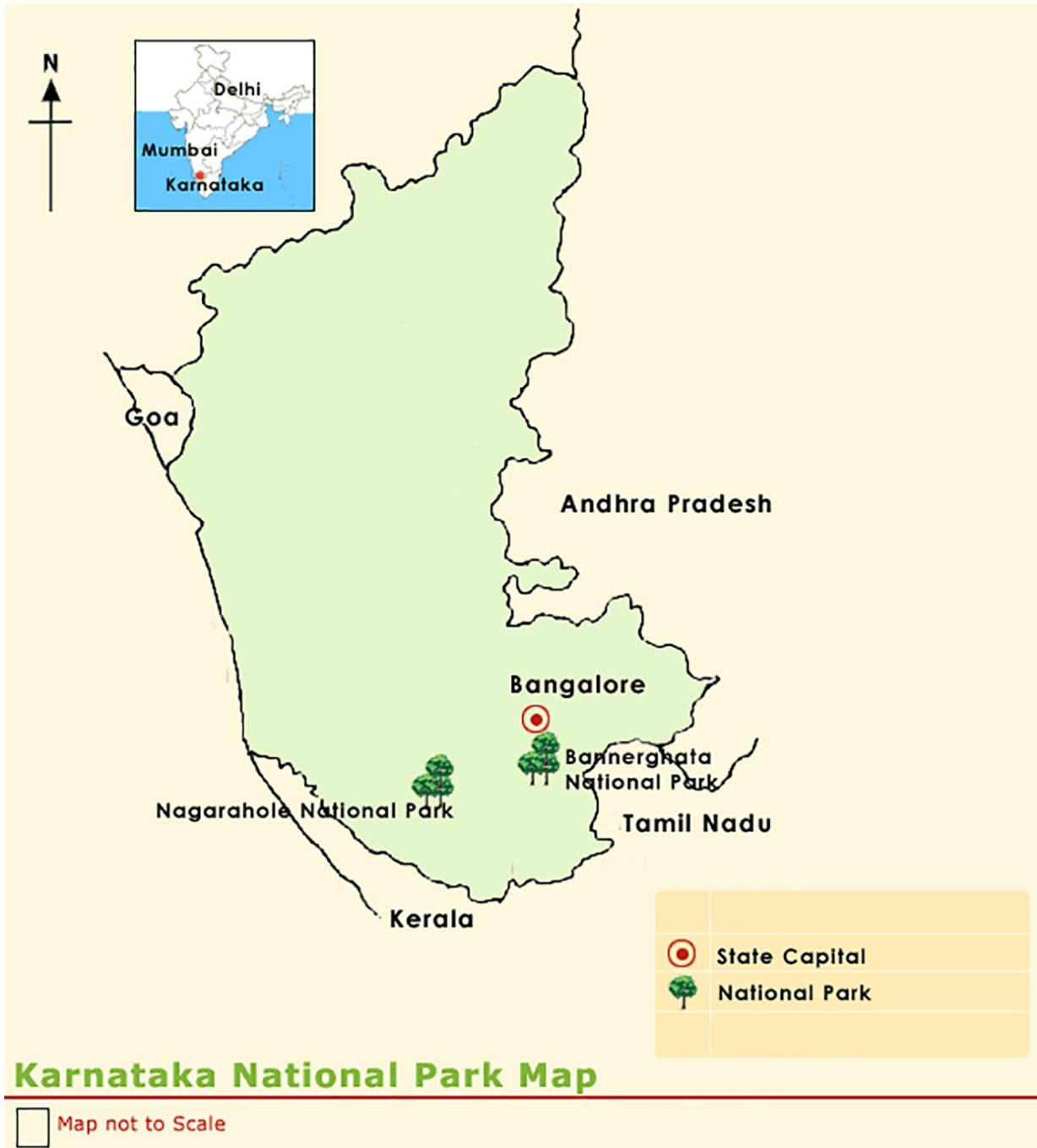
- The programme provides an opportunity to get involved with the feeding and veterinary care expenses for zoo animals with a provision for **Income Tax rebate under 80G.**
- The BBBP has released a list of **animals that can be adopted:** King cobra, Indian rock python, Black buck, Sambar, Emu, Golden jackal, Indian leopard, Sloth bear, Hippopotamus, Bengal tiger, Giraffe, etc.

### Key Points

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- In **2004**, BBBP was **carved out of the Bannerghatta National Park (BNP)** and brought under the **Zoo Authority of Karnataka (ZAK).**  
BNP which was declared a **national park in 1974.**
- BBBP has **four divisions:** the zoo, the safari, the butterfly park and the rescue centre.  
It is one among the few places in the world where wilderness is preserved so close to a big city.
- The **valley of Champakadhama hills** is inside the park.

- **Objectives:**
  - To complement and strengthen national efforts in ex-situ conservation of biodiversity.
  - To support the conservation of endangered species.
  - To provide opportunities for scientific studies, research and documentation on conservation and creation databases.
  - To bring awareness to the public and provide recreational opportunity to the visitors.
- **Flora:** Scrub type (dry deciduous forests), southern tropical dry deciduous forests, southern tropical moist mixed forests.
- **Fauna:** Elephant, Chital, Barking Deer, Striped Hyena, Porcupine, Peafowl, Grey Jungle Fowl, Partridges, crocodiles, tortoise, python, varieties of butterflies, etc.



**Source: BL**

## Statehood Day of Maharashtra and Gujarat

### Why in News

Maharashtra and Gujarat celebrated their statehood day on **1<sup>st</sup> May, 2020**. On the occasion, the Prime Minister and other leaders praised the contribution made by the two states to the development of the country.

## Key Points

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- On May 1<sup>st</sup>, 1960, the **bilingual state of Bombay was divided into two separate states** by the Bombay Reorganisation Act, 1960: **Maharashtra for Marathi speaking** people and **Gujarat for Gujarati speaking** people.
- Gujarat was established as the **15<sup>th</sup> state of the Indian Union**.

## Maharashtra

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- **Capital:** Mumbai
- **Sex Ratio:** 929 female per 1000 male (**National: 943**)
- **Literacy:** 82.34% (**National: 74.04%**)
- **Arabian Sea guards the western boundary of Maharashtra**, while Gujarat and Madhya Pradesh are on the northern side. Chhattisgarh covers the eastern boundary of the State. Karnataka and Telangana are on its southern side.
- The State has been **identified as the country's powerhouse** and Mumbai, its capital as the **centre point of India's financial and commercial markets**.
- Maharashtra has two major ports, **Mumbai Port and Jawaharlal Nehru Port (JNP)** both located in Mumbai harbour.
- According to the **India State of Forest Report (ISFR)-2019**, Maharashtra's forest cover is **16.50% of the state's geographical area**.
- **Bhil, Gond-Madia, Katkari, Koli, Oraon, Warli** are the major tribes of Maharashtra.

## Gujarat

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- **Capital:** Gandhinagar
- **Sex Ratio:** 919 female per 1000 male (**National: 943**)
- **Literacy:** 78.03% (**National: 74.04%**)
- The state is **bounded by the Arabian Sea in the west, Pakistan and Rajasthan in the north** and north-east respectively, Madhya Pradesh in the south-east and Maharashtra in the south.
- Gujarat is the **first state in the nation** to start a **separate department of 'climate change'** to tackle the issue of global warming.
- **Kandla Port** is the major port in Gujarat along with 41 minor ports.
- **Gamit, Bhils, Dhodias, Bawcha, Kunbi** are the major tribes present in the state.
- According to the **India State of Forest Report (ISFR)-2019**, **Gujarat has the largest area of wetlands** within Recorded Forest Area/Green Wash (RFA/GW) in the country followed by West Bengal.

**Source: PIB**

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# Kashmir Saffron got GI Tag

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## Why in News

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Recently, the Kashmir saffron got **Geographical Indication (GI) tag status.**

## Key Points

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- Saffron cultivation is believed to have been **introduced in Kashmir by Central Asian** immigrants around the 1st Century BCE.
  - It has been associated with **traditional Kashmiri cuisine** and represents the rich cultural heritage of the region.
  - It is a **very precious** and **costly product.**
- In ancient Sanskrit literature, saffron is referred to as **'bahukam'**.
- It is cultivated and harvested in the **Karewa (highlands) of Jammu and Kashmir.**
- **Uniqueness:** The features which differentiates it from other saffron varieties available the world over are:
  - It is the **only saffron that is grown at an altitude of 1,600 m to 1,800 m** above mean sea level.
  - It has **longer** and **thicker stigmas, natural deep-red colour, high aroma, bitter flavour, chemical-free processing.**
  - It also has a high quantity of **crocin** (colouring strength), **safranal** (flavour) and **picrocrocin** (bitterness).
- **Types:** There are **three types** of saffron available in Kashmir — **Lachha Saffron, Mongra Saffron and Guchhi Saffron.**
- **Uses:**
  - Kashmir saffron is used globally as a **spice.** It also helps in revitalizing health.
  - It is used in **cosmetics** and for **medicinal purposes.**
- **Benefit of tag:** With the GI tag, Kashmir saffron would **gain more prominence in the export market.**
  - **Iran is the largest producer of saffron** and India is a close competitor.

**Source: TH**

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## Thrissur Pooram

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## Why in News

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For the first time since its inception, **Thrissur Pooram** will be observed with rituals within the temple premises with just a few participants.



This was done in the wake of the **lockdown to prevent the spread of Covid-19.**

## Key Points

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- Thrissur Pooram is an **annual Hindu festival** held in **Kerala**. It is celebrated on the day when the **star sign “Pooram” occurs in the Malayalam month of “medam (April-May)”**.
- The festival was the brainchild of **Raja Rama Varma**, famously known as **Sakthan Thampuran**, the Maharaja of Cochin (1790–1805).
- Pooram officially begins with **Kodiyettam (flag hoisting ceremony)** in which all the participating temples of the festival are present.
- The Pooram **consists of ten temples** in and around Thrissur and is considered to be a ceremony where these deities come together **to pay obeisance to Lord Shiva at the Vadakkunnathan Temple**, located in the centre of the town.
- One of the hallmarks of the festival is the **percussion ensemble** consisting of traditional instruments like **chenda, maddalam, edakka, thimila and kombu**.
- The seventh day of the pooram is the last day. It is also known as **“Pakal Pooram”**.
- Pooram, though a Hindu ritual, has **grown to encompass all religious and cultural strains** of Kerala. Both the Muslim and Christian communities participate in the festival in a variety of ways highlighting **secular credentials of the state**.

**Source: TH**

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