

# My Notes....

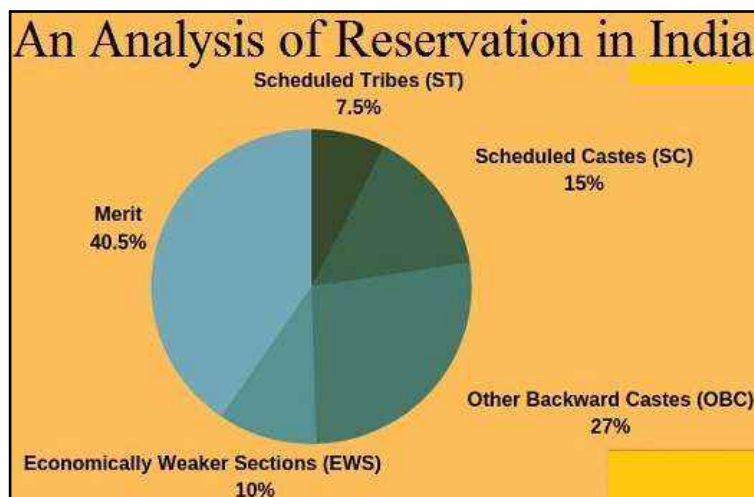
## NATIONAL

### QUOTAS NOT A FUNDAMENTAL RIGHT

The Supreme Court has said on 9 February 2020 that there is "no fundamental right which inheres in an individual to claim reservation in promotions", and also no court can order a state government to provide for reservation to SC/STs. A bench comprising Justices L. Nageswara Rao and Hemant Gupta said, "In view of the law laid down by this Court, there is no doubt that the State Government is not bound to make reservations. There is no fundamental right which inheres in an individual to claim reservation in promotions. No mandamus can be issued by the Court directing the State Government to provide reservations.

What

1. Citing the necessity of relevant data collection regarding representation of SC/STs in public jobs, the apex court emphasized this exercise is prerequisite to begin reservation. And this data collection exercise, is not required when the state government decided not to provide reservations.
2. The top court observed the state government has the absolute discretion to decide whether or not to provide for reservation in jobs or reservation in promotions. Also, the state government is not under any obligation to do so.
3. Citing its judgement, the bench said that Article 16(4) and 16(4-A) are enabling provisions and the collection of quantifiable data showing inadequacy of representation of Scheduled Castes and Scheduled Tribes in public service is a "sine qua non for providing reservations in promotions."
4. The top court also clarified that a state government is bound to collect data regarding inadequacy of representation of SCs/STs in government services when it wants to provide reservation but otherwise.
5. The top court also observed that the state cannot be issued directions to provide reservations for appointment in public posts. The State is not bound to make reservation for Scheduled Castes and Scheduled Tribes in matters of promotions, added the court.
6. However, if a situation arises where such provisions were to be introduced, then the state government concerned should collect quantifiable data, which exhibits inadequacy of representation of that class in public services. And, this data would have to be brought on record before the court when a challenge is laid to the reservation policies.
7. The court observed, "Not being bound to provide reservations in promotions, the State is not required to justify its decision on the basis of quantifiable data, showing that there is adequate representation of members of the Scheduled Castes and Scheduled Tribes in State services.
8. The apex court also observed that the inadequacy of representation of SC/STs is a



matter within the subjective satisfaction of the State.

9. The State can form its own opinion on the basis of the material it has in its possession already or it may gather such material through a Commission/Committee, person or authority.
10. The ruling of the top court came on a clutch of petitions connected with reservation to Scs and STs in promotions in the posts of Assistant Engineer (Civil) in Public Works Department, Government of Uttarakhand, where the government had decided against reservations. But, the High Court asked the state to first collect quantifiable data connected with representation of SCs/STs, and decide on the matter.
11. Under Article 16, the state can make reservations in matters of appointment and promotion in favour of the SCs and STs if they are not adequately represented in the services of the state.

#### Flashback

1. The issue of reservations is a contentious one, with a petition regarding halting of benefits for well-off members from SC/ST communities - the "creamy layer" - pending in the Supreme Court.
2. In 2018 a five-judge Constitution Bench said the "creamy layer" could not get benefits of reservation in government jobs.
3. In December last year the centre requested a seven-judge bench to review this.

## SC UPHOLDS AMENDMENTS SC/ST ACT

The Supreme Court on 10 February 2020 upheld the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Amendment Act of 2018, which nullified its own controversial March 20, 2018 judgment diluting the stringent provisions of the Dalit protection law. The Supreme Court had itself earlier recalled the March 20 judgment on October 1, 2019 in a review petition filed by the government.

What

1. It had said it was wrong on the part of the March 20 judgment to treat all SC/ST **community members as "a liar or crook"**.
2. **It was against** "basic human dignity". The March 20 judgment had diluted the original 1989 legislation, saying they were using its provisions to file false criminal complaints against innocent persons.
3. Even while reserving the case for judgment, the Bench of Justices Arun Mishra, Vineet Saran and S. Ravindra Bhat had made it clear that it would neither upset the October 1 judgment nor dilute the provisions of the statute.
4. The government had enacted the Amendments, saying the Scheduled Castes and Scheduled Tribes continued to face the same social stigma, poverty and humiliation which they had been subjected to for centuries.
5. The 2018 Act had nullified a March 20 judgment of the Supreme Court, which allowed anticipatory bail to those booked for committing atrocities against Scheduled Castes and Scheduled Tribes members.
6. The original 1989 Act bars anticipatory bail. The Supreme Court verdict saw a huge backlash across the country.
7. Several died in ensuing protests and property worth crores of rupees was destroyed. The government reacted by filing a review petition in the Supreme Court and subsequently amended the 1989 Act back into its original form.
8. Several petitions were filed challenging the 2018 Amendment Act. The lead petitioner, advocate Prithvi Raj Chauhan, had even called the amendments a **"blunder" and a violation of the fundamental right to equality and personal liberty.**

- The Supreme Court, however, had refused to stay the implementation of the amendments.
9. The government had responded that there was no decrease in the atrocities committed on members of SC/ST communities despite the laws meant to protect their civil rights.
  10. The SC/ST (Prevention of Atrocities) Act of 1989 is the least which the country owes to this section of the society who have been denied several civil rights since generations and have been subjected to indignities, humiliations and harassment.
  11. The 2018 amendments had ruled out any provision for anticipatory bail for a person accused of atrocities against SC/STs, notwithstanding any court order.
  12. They provided that no preliminary inquiry would be required for registering a criminal case and an arrest under this law would not be subject to any approval.
  13. **The top court's verdict came on a batch of PILs challenging the validity of the SC/ST Amendment Act of 2018, which was brought to nullify the effect of the apex court's 2018 ruling, which had diluted the provisions of the stringent Act.**

## MAJOR PORT AUTHORITY BILL 2020

To provide autonomy to **India's** top 12 major ports and improve their efficiency and competitiveness, the government on 12 February 2020 gave nod to much-awaited Major Ports Authority Bill to replace a 1963 law governing the sector and said it will be introduced in the ongoing session of Parliament. Earlier, the Bill was introduced in the Lok Sabha in 2016 and thereafter referred to the Parliamentary Standing Committee but got lapsed after the dissolution of previous Lok Sabha. The Union Cabinet chaired by Prime Minister Narendra Modi has approved Major Port Authority Bill, 2020 to replace existing Major Port Trust Act.

What

1. It will provide more operational autonomy to ports and fast decisions will be possible at port level only. The Bill will be introduced in the ensuing session of Parliament, Shipping Minister Mansukh Lal Mandaviya said.
2. This will empower the major ports to perform with greater efficiency on account of full autonomy in decision making and by modernising the institutional framework of major ports. This will not only boost India's EXIM trade but generate employment.
3. With a view to promote the expansion of port infrastructure and facilitate trade and commerce, the proposed bill aims at decentralising decision making and to infuse professionalism in governance of major ports, a Ministry of Shipping statement said.
4. The new Major Ports Authority Bill, 2020 would help to impart faster and transparent decision making benefiting the stakeholders and better project execution capability.
5. The Bill is aimed at reorienting the governance model in central Ports to landlord port model in line with the successful global practice, this will also help in bringing transparency in operations of Major Ports.
6. The government said the proposed Bill has been prepared after extensive consultation with all the stakeholders and Ministries/Departments after taking into account the

### Flashback

1. India has 12 major ports -- Deendayal (erstwhile Kandla), Mumbai, JNPT, Marmugao, New Mangalore, Cochin, Chennai, Kamarajar (earlier Ennore), V O Chidambarnar, Visakhapatnam, Paradip and Kolkata (including Haldia).
2. These together had handled 699.04 million tonnes (MT) of cargo during 2018-19.

recommendations of a parliamentary standing committee.

7. It said the Bill is more compact in comparison to the Major Port Trusts Act, 1963 as the number of sections has been reduced to 76 from 134 by eliminating overlapping and obsolete Sections.
8. The role of Tariff Authority for Major Ports (TAMP) has been redefined as Port Authority has now been given powers to fix tariff, which will act as a reference tariff for purposes of bidding for PPP (public private partnership) projects.
9. The Board of the Port Authority has been delegated the power to fix the scale of rates for other port services and assets including land...The Boards of the Port Authority have been delegated full powers to enter into contracts, planning and development, fixing of tariff except in national interest, security and emergency arising out of inaction and default.
10. The Board of each Major Port shall be entitled to create specific master plan in respect of any development or infrastructure established or proposed to be established within the port limits and that provisions have been made for safeguarding the pay and allowances and service conditions including pensionary benefits of the employees of major ports.

## SC DIRECTS POLITICAL PARTIES

The Supreme Court on 13 February 2020 put political parties on a tight leash by ordering them to publish the criminal history of their candidates for Assembly and Lok Sabha polls, along with reasons that goaded them to choose those with criminal antecedents over decent people, within 48 hours of the selection of the candidates. A Bench led by Justices Rohinton F. Nariman ordered political parties to publish the criminal antecedents of their candidates in local and national newspapers and on their social media handles. Following this, the parties would have to file compliance reports with the Election Commission of India (ECI) or face contempt action.

What

1. **The judgment signified the court's alarm over the unimpeded rise** in the accommodation of criminals, often facing heinous charges like rape and murder, in the political arena.
2. It is based on a proposition made by the ECI to ask parties not to give tickets to persons with criminal antecedents for contesting elections.
3. The ECI has said 46% of Members of Parliament have criminal records. **The Supreme Court's long string of judgments against criminalisation of politics have** hardly scratched the surface of the deep rot.
4. Justice Nariman, speaking for the Bench in the judgment, said a move to steer politics away from the denizens of the criminal world would definitely serve national and public interest.
5. The apex court had earlier observed that the issue of penalising political parties or candidates for not disclosing criminal antecedents has to be dealt with carefully as **serious allegations with "political overtones" are often being made against candidates.**
6. In September 2018, a five-judge Constitution bench had unanimously held that all candidates will have to declare their criminal antecedents to the Election Commission before contesting polls and called for a wider publicity, through print and electronic media about antecedents of candidates.
7. **It had left it to Parliament to "cure the malignancy" of criminalisation of politics** by making a law to ensure that persons facing serious criminal cases do not enter the **political arena as the "polluted stream of politics" needs to be cleansed.**
8. During the hearing on the contempt plea, the EC had told the court that increase in **number of MPs having pending criminal cases was "disturbing" and as per the statistics, there were 43 per cent MPs in Parliament who have criminal cases against**

them.

9. The poll panel had agreed with the suggestions of senior lawyer Gopal Sankaranarayanan, representing BJP leader and petitioner Ashwini Upadhyay, including that all political parties should mandatorily upload on their website details of candidates with criminal antecedents, along with the reasons as to why those without any criminal record could not be selected.
10. The Election Commission has also agreed with the suggestion that political parties may be asked to furnish details on its website regarding criminal antecedents of candidates and give reasons as to why he or she has been given the ticket.
11. On October 10, 2018, the EC had issued notification regarding the amended Form-26 and directions to political parties and candidates for publication of criminal antecedents.
12. However, the plea filed by Upadhyay alleged that the EC neither amended the Election Symbol Order, 1968 nor the model code of conduct (MCC) so the said notification has no legal sanction.

**Contempt plea**

1. On 13 February 2020 verdict is sourced from a contempt petition filed by advocate Ashwini Upadhyay seeking action against the authorities and parties for not complying fully with a September 2018 judgment by a Constitution Bench that had directed parties to publish online the pending criminal cases of their election candidates.
2. The 2018 judgment had urged Parliament to **bring a “strong law” to cleanse parties of leaders facing trial for serious crimes.**
3. Two years ago, a five-judge Bench led by the then Chief Justice Dipak Misra had concluded that rapid criminalisation of politics could not be stopped by merely disqualifying tainted **legislators but should begin by “cleansing” political parties.**
4. It had even then issued guidelines, including that both the candidate and the party should declare the criminal antecedents of the former in widely circulated newspapers.

## INDIA SLIPS IN INTERNATIONAL IP INDEX

**India’s slipped to 40th position on the International Intellectual Property (IP) Index**, which analyses the IP climate in 53 global economies, this year, according to a report of the **US Chamber of Commerce’s Global Innovation Policy Center**. Last year India was ranked at 36th position out of 50 countries. The US, the UK, Sweden, France and Germany remained the top five economies on the intellectual property index in 2019 retaining their spots from the last year.

What

1. Since the release of the 2016 National IPR Policy, the Government of India has made a focused effort to support investments in innovation and creativity through increasingly robust IP protection and enforcement.
2. Implementation of the policy has improved the speed of processing for patent and trademark applications, increased awareness of IP rights among Indian innovators and creators.





3. It said that India has made significant progress towards establishing stronger IP protections—but the “**job is not yet done**”.
4. **The report noted that** “to continue this upward trajectory, much work remains to be done to introduce transformative changes to **India’s overall IP** framework and take serious steps to consistently implement strong IP standards.

## SAMPRITI-IX BEGIN

14-day joint military training exercise by Indian and Bangladesh armies was flagged off on 3 February 2020 in Umroi in Meghalaya. The exercise christened 'SAMPRITI-IX' is an important bilateral defence cooperation endeavour between India and Bangladesh. This is the ninth edition of the exercise which is hosted alternately by the two countries.

What

1. The Bangladesh army contingent is being led by Brigadier General Md Shafiul Azam and both armies will familiarise each other in various tactical drills and procedures.
2. Soldiers from both armies will hold joint tactical operations like cordon and search, raid and house clearance drills.
3. During the joint military exercise SAMPRITI-IX a command post exercise (CPX) and a field training exercise (FTX) will be conducted during the next two weeks.
4. For both CPX and FTX, a scenario where both nations are working together in a counter terrorism environment will be simulated under the UN Charter.
5. The FTX curriculum is progressively planned in which the participants will get familiar with each others organisational structure and tactical drills. Subsequently, joint tactical exercise will be conducted wherein the battle drills of both the armies will be practised.

### Joint Military Exercise Name

- Hand in Hand - India-China
- Garuda Shakti - India-Indonesia
- Surya Kiran - India-Nepal
- Yudh Abhyas - India-USA
- Mitra Shakti - India-Sri Lanka

## INTERNATIONAL

### U.N. TAKES NO ACTION AGAINST MYANMAR

The U.N. Security Council on 4 February 2020 discussed the International Court of **Justice’s order** that Myanmar must do all it can to prevent genocide against the Rohingya Muslims, but failed to agree on a statement. **Myanmar’s ally China as well as** Vietnam, which is part of the regional Association of Southeast Nations along with Myanmar, objected, diplomats said, speaking on condition of anonymity because the meeting was closed.

What

1. Instead, the European Union members of the council urged Myanmar in a joint statement to reporters **afterward to comply with the measures ordered by the U.N.’s top court, stressing that they are “compulsory under international law.”**
2. France, Germany, Belgium and Estonia along with former council member Poland **also urged Myanmar “to take credible action to bring to justice those responsible for human rights violations.”**
3. “Myanmar must address the root causes of its conflicts, in Rakhine State, but also in **Kachin and Shan States,**” the EU members said. “Accountability of perpetrators of

- human rights and humanitarian law violations is a necessary part of this process.”
4. More than 700,000 Rohingya fled to Bangladesh after Myanmar security forces launched a crackdown on the Muslim minority in August 2017 in response to an attack by a Rohingya insurgent group. Bangladesh currently houses over 1 million Rohingya refugees.
  5. **Myanmar has long claimed the Rohingya are “Bengali” migrants from Bangladesh, even though their families have lived in the country for generations.**
  6. Nearly all Rohingya have been denied citizenship since 1982, effectively rendering them stateless, and they are denied freedom of movement and other basic rights.
  7. **The EU countries said “Myanmar must also create the conditions for and facilitate a voluntary, safe, dignified and sustainable return of the Rohingya to Myanmar.”**

## IRAN REMEMBERS 1979 ISLAMIC REVOLUTION

Hundreds of thousands across Iran marked the anniversary of its 1979 Islamic Revolution on 11 February 2020 amid some of the highest tensions ever between Tehran and the US in the past four decades. While Iranian President Hassan Rouhani gave a speech in Tehran's iconic Azadi Square denouncing the US, he also focused on encouraging the country to vote in upcoming parliamentary elections, even after officials disqualified thousands from running, including 90 current lawmakers.

What

1. Iran views high turnout as a vote of confidence in the country's Shia theocracy, something it wants to show as public anger still simmers over the country accidentally shooting down a Ukrainian jetliner in January that killed all 176 people onboard.
2. Tehran for days denied its forces shot down the passenger plane before admitting to it in the face of mounting Western pressure.
3. The shutdown also marred funeral processions that drew millions of mourners for Revolutionary Guard Gen. Qassem Solemani, killed in a US drone strike in Baghdad.
4. This year's anniversary celebrations come amid ever-increasing bitterness between Tehran and Washington. Tensions have spiked since President Donald Trump withdrew the US from Iran's nuclear deal with world powers in May 2018.
5. A series of attacks across the Mideast culminated with the US launching the drone strike that killed Soleimani in January. Iran retaliated with a ballistic missile attack targeting US forces in Iraq, injuring over 100 US troops.

### Flashback

1. Iran's Islamic Revolution began with widespread unrest over the rule of Shah Mohammad Reza Pahlavi.
2. The shah, fatally and secretly ill with cancer, fled Iran in January 1979. Ayatollah Ruhollah Khomeini then returned from exile and the government fell Feb. 11, 1979, after days of mass demonstrations and confrontations between protesters and security forces.
3. Iran later would vote to become an Islamic Republic, a Shia theocracy with Khomeini as its first supreme leader with final say over all matters of state.
4. Anger over America allowing the shah into the country to receive cancer treatment in New York would later spark the takeover of the US embassy in Tehran by student militants and the subsequent hostage crisis, which kindled decades of enmity.

## ASTRONAUT LANDS BACK ON EARTH

Koch touched down on 6 February 2020 on the Kazakh steppe after 328 days in space along with Luca Parmitano of the European Space Agency and Alexander Skvortsov of the Russian space agency. Dmitry Rogozin, head of Russia's Roscosmos space agency, said the crew had returned safely. Koch, a 41-year-old Michigan-born engineer, beat the previous record for a single spaceflight by a woman — 289 days, held by NASA veteran Peggy Whitson — on December 28, 2019.

What

1. She had already made history by that point as one half of the first-ever all-woman spacewalk along with NASA counterpart Jessica Meir in October.
2. Her first spaceflight became a 328-day mission with 5,248 orbits of Earth, a journey of 139 million miles, roughly the equivalent of 291 trips to the Moon & back.
3. Koch called three-time flyer Whitson “a heroine of mine” and a “mentor” in the space programme after she surpassed the 59-year-old's record.
4. **Koch's return comes after an advert produced by the skincare brand Olay ran during an intermission in the American football Super Bowl with a call to “make space for women”.**
5. The first woman in space was Soviet cosmonaut Valentina Tereshkova whose spaceflight in 1963 is still the only solo mission carried out by a woman.
6. But the cosmonauts Russia has sent to the ISS since expeditions began in 2000 have **all been men with the exception of Yelena Serova's launch in 2014.**
7. Both Tereshkova and Serova are now lawmakers in the Russian parliament, where they represent the ruling United Russia party.
8. Unlike Koch, whose stay aboard the ISS was extended, Parmitano and Skvortsov are rounding off regular six-month missions.
9. The 43-year-old Italian posted regular shots of the Earth while aboard, highlighting the plight of the Amazon rainforest **and describing the Alps as “like a spinal column, never bending to time”.**
10. Four male cosmonauts have spent a year or longer in space as part of a single mission **with Valery Polyakov's 437 days the overall record.**
11. Scott Kelly holds the record for a NASA astronaut, posting 340 days at the ISS before he returned home in 2016.

## INDIA, PORTUGAL INK SEVEN PACTS

India and Portugal on 14 February 2020 signed seven agreements to boost cooperation in a range of areas after Prime Minister Narendra Modi and Portuguese President Marcelo Rebelo de Sousa held extensive talks. The pacts provide for cooperation in areas of investment, transport, ports, culture and industrial and intellectual property rights. Portugal is an important country for India in Southern Europe, and bilateral ties have witnessed a steady progress in the last 15 years. In October 2005, Portugal extradited Abu Salem and Monica Bedi to face terror charges.

What

1. Prime Minister Modi visited Portugal in June 2017 during which 11 agreements were signed covering a large number of areas including space, avoidance of double taxation, nano-technology, biotechnology and higher education.
2. Sousa arrived here on 13 February 2020 night on a four-day visit, his first to India. The last visit by a Portuguese President to India was in 2007. He is accompanied by a high-level delegation.
3. Officials said the talks covered entire expanse of bilateral ties including in areas of trade, investment and education.



- In the morning, the Portuguese president was accorded a ceremonial welcome at the Rashtrapati Bhavan.
- The pacts signed after Modi-Sousa talks included a joint declaration a bilateral mobility partnership and another on maritime transport.

## ECONOMY

### UNION BUDGET 2020-21

Presenting the union budget for 2020-21, Finance Minister Nirmala Sitharaman said, this is a budget to boost their income and enhance their purchasing power.

#### Highlights of this year's budget:

Tax:

- A new tax regime has been announced. Those who want to be in the old regime with exemptions, can continue to pay at the old rates.
- Between ₹5 lakh and ₹7.5 lakh - Reduced to 10% from the current 20%
- Between ₹7.5 lakh to ₹10 lakh - Reduced to 15% from the current 20%
- Between ₹10 lakh to ₹12.5 lakh - Reduced to 20% from the current 30%
- Between ₹12.5 lakh to ₹15 lakh - Reduced to 25% from the current 30%
- Above ₹15 lakh - Continue at 30%, but without exemptions
- Over 70 deductions have been removed.
- Companies will no longer be required to pay Dividend Distribution Tax (DDT).
- Aadhaar-based verification for GST compliance to be introduced.
- Aadhar-based quick issuance of PAN announced.


### Agriculture, Irrigation and Rural Development


PM KUSUM to cover 20 lakh farmers for stand alone solar pumps and further 15 lakh for grid connected pumps.

- Viability gap funding for creation of efficient warehouses on PPP mode.
- SHGs run Village storage scheme to be launched.
- Integration of e-NWR with e-NAM.

"Kisan Rail" and "Krishi Udaan" to be launched by Indian Railways and Ministry of Civil Aviation respectively for a seamless national cold supply chain for perishables.

- Elimination of FMD and brucellosis in cattle and PPR in sheep and goat by 2025.
- Increasing coverage of artificial insemination to 70 per cent.
- Doubling of milk processing capacity by 2025.
- Agricultural credit target of ₹15 lakh crore for 2020-21.





- Fish Production target of 200 lakh tonnes by 2022-23.
- Another 45000 acres of aqua culture to be supported.
- Fishery extension through 3477 Sagar Mitras and 500 fish FPOs.
- Raise fishery exports to ₹1 lakh crore by 2024-25.

#### Economy and Finance

- Bank deposit insurance cover had been increased from ₹1 lakh to ₹5 lakh per depositor.
- Government plans to amend the Companies Act to decriminalise civil offences.
- Government to sell part of its stake in LIC via public offering.

#### Agriculture

- A budget allocation of ₹2.83 lakh crore for the sector comprising agriculture and allied activities.
- Doubling farmers incomes by 2020.
- Agri-credit availability set at ₹15 lakh crore for 2020-21.

- Comprehensive measures for 100 water stressed districts.
- Provide 20 lakh farmers to set up standalone solar pumps. Help another 15 lakh farmers to solarise their power grid.
- Village storage scheme proposed to be run by women SHGs.
- Indian Railways to have refrigerated coaches **capability in 'kissan trains' to carry perishables and milk.**
- Krishi UDAN on international and national routes.

#### Health and Sanitation

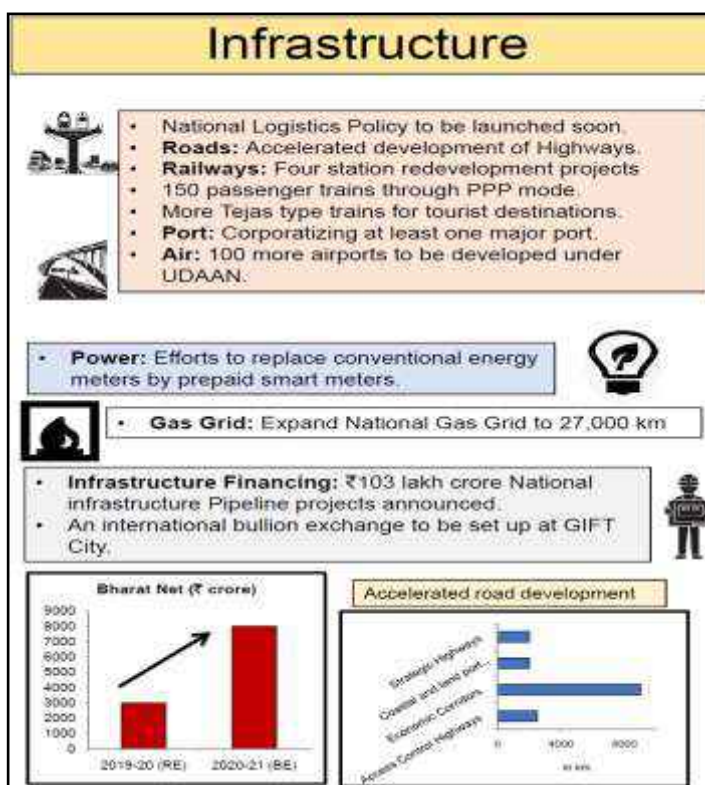
- An allocation of ₹69,000 crore for the health sector.
- ₹12,300 crore for Swachh Bharat this year.
- Proposal to set up hospitals in Tier-II and Tier-III cities with the private sector using PPP.
- Expand Jan Aushadhi scheme to provide for all hospitals under Ayushman Bharat by 2025.

#### Education

- ₹99,300 crore for education sector in 2021 and about ₹3,000 crore for skill development.
- Urban local bodies to provide internship to young engineers for a year.
- Degree-level full fledged online education programmes by institutions ranked in the top 100 in NIRF rankings, especially to benefit underprivileged students.
- A national police university and a national forensic science university is proposed to be setup.
- IND SAT exam for students of Asia and Africa to promote "study in India" programme.**

#### Infrastructure

- Budget proposes to provide ₹1.7 lakh crore for transport infrastructure in 2021
- National Logistics Policy to be released soon.
- Chennai-Bengaluru Expressway to be started.
- Aim to achieve electrification of 27000 km of lines.
- Plan to have a large solar power capacity for Indian Railways.
- The government also proposes a Bengaluru suburban rail project at a cost of ₹18,600 crore.
- Govt to monetise 12 lots of national highways by 2024.
- 100 more airports will be developed by 2024 to support UDAN.



## 15TH FC REPORT

The Fifteenth Finance Commission (FC), in its report for fiscal year 2020-21, has recommended a marginal reduction in the vertical devolution of the divisible tax pool to 41 per cent from the prevailing 42 per cent. This is due to the newly formed Union Territories of Jammu and Kashmir, and Ladakh, which will get funds from the **Centre's share, which means** devolution, will be for 28 states compared to 29 earlier. The FC also reintroduced performance-based incentives to states on two parameters — demographic performance and taxation efforts — and said it would recommend more incentives on further parameters, conditional upon states fulfilling certain criteria in the coming fiscal year.

What

1. Finance Minister Nirmala Sitharaman said the Centre had decided to **“substantially” accept the recomm**endations of the 15th FC but did not indicate which recommendations it had accepted.
2. The 15th FC, whose term was extended for 11 months, will submit its second report — for 2021-22 to 2025-26 — in October.
3. It stated in its first report that a number of key recommendations it was required to make will be examined in greater detail and will find space in the second report.
4. This includes the feasibility of a separate defence and national security fund, for which it will form an expert group before giving its recommendations.
5. The report also said that the Centre should, in the coming year, rationalise centrally sponsored schemes and that centre and states should fully reveal the extent of their off-budget borrowings.
6. The Commission has noted the tendency of the Union and state governments to borrow outside the consolidated fund, leading to accumulation of extra-budgetary liabilities.
7. We recommend that in the interest of transparency, both the centre and states need to make full disclosure of extra-budgetary borrowings and take steps to

### Among other recommendations

1. The Commission also suggested that the country needs an overarching fiscal framework for Centre as well as states, on the lines of the FRBM Act, which would lay down accounting, budgeting and auditing standards to be followed at all levels of the government.
2. We recommend the constitution of an expert group to draft such a legislation which will be an important first step in establishing a statutory framework to implement the essential features of a sound Public Financial Management System.
3. The group should also clearly identify those aspects of the legislation that will require consistent legislation at the level of the states.
4. While making its recommendations, the Commission did not mince words on the economic slowdown and its **impact on the centre and states' resources**.
5. The report said that making forecasts for the next five years using 2019-20 as a base will be 'excessively aspirational and inaccurate'. **Conservatism will not help** either. Hence, the 15th FC will wait for macroeconomic indicators over the next few quarters to make these forecasts in its next report.
6. The 15th FC departed in a way from previous commissions by increasing focus on local bodies. We recommend an amount of Rs 90,000 crore as grants to local bodies for 2020-21, which is 4.3 per cent of the estimated divisible pool.

- eliminate them in a time-bound manner.
8. While the horizontal devolution — the first step in which the Centre sets aside the **kitty for the states' share** — was marginally reduced, there was a 21 per cent increase in revenue deficit grants for states from Revised Estimates of 2019-20 (the last year of the 14th Finance Commission award period) to 2020-21, budget documents show.
  9. The 15th FC said that while it was inclined to leave the vertical devolution unchanged from the 42 per cent recommended by the 14th Finance Commission, it had to take into account the new UTs.
  10. We notionally estimated that the share of erstwhile state of Jammu and Kashmir would have come to around 0.85 per cent of the divisible pool.
  11. We believe there is a strong case to enhance this to 1 per cent to meet the security and other special needs of J&K and Ladakh, the report stated. Since this **enhancement has to be met from the Union's resources, we recommend that the aggregate state of shares may be reduced by 1 percentage point to 41 per cent of the divisible pool**, it said.
  12. By assuming nominal GDP growth rates at 10 per cent for FY20 and 11 per cent for FY21, the Fifteenth Finance Commission has made optimistic assumptions.

## NEW LIQUIDITY MANAGEMENT FRAMEWORK

The Reserve Bank of India (RBI) on 6 February 2020 adopted a new liquidity management framework in which there would be no fixed daily liquidity injection operations, but the central bank would act whenever the banking system requires money. The weighted average call rate (WACR) will remain the operating target of monetary policy, the RBI said, which means it will ensure enough liquidity to anchor the call rate at around the repo rate which means if the call rate inches above the repo rate, it would signal liquidity deficit and the central bank will bring its tools to infuse liquidity. Similarly, if the call rate is below the repo rate that would mean the banking system has surplus liquidity. In that case, the central bank can operate to suck out the liquidity through its operations.

What

1. The liquidity management corridor will be retained at 50 basis points, which means the RBI can allow call rates to rise up to the marginal standing facility (MSF) rate (currently at 5.40 per cent) and reverse repo rate (currently at 4.90 per cent), while the repo rate remains at the middle at 5.25 per cent.
2. With the WACR being the single operating target, the need for specifying a one-sided target for liquidity provision of one percent of net demand and time liabilities (NDTL) does not arise. Accordingly, the daily fixed rate repo and four 14-day term repos every fortnight being conducted, at present, are being withdrawn.
3. However, the Reserve Bank will ensure adequate provision/absorption of liquidity as warranted by underlying and evolving market conditions - unrestricted by quantitative ceilings - at or around the policy rate.
4. **Instruments of liquidity management will include “fixed and variable rate repo/reverse repo auctions, outright open market operations (OMOs), forex swaps and other instruments as may be deployed from time to time to ensure that the system has adequate liquidity at all times, the RBI said.**
5. While getting rid of the 14 day fixed repo, the RBI said it will operate a 14-day term repo/reverse repo operation at a variable rate that would be conducted to coincide with the cash reserve ratio (CRR) maintenance cycle. **This would be the “main liquidity management tool for managing frictional liquidity requirements.”**
6. Considering the banking system has a liquidity surplus of about Rs 4 trillion, the RBI will continue with the fixed rate reverse repo daily.



7. The main liquidity operation would be supported by fine-tuning operations, overnight or longer, to tide over any unanticipated liquidity changes during the reserve maintenance period.
8. In addition, the Reserve Bank will also conduct, if needed, longer-term variable rate repo/reverse repo operations of more than 14 days.

## FC CONSTITUTE A PANEL

The Fifteenth Finance Commission (FC) has constituted a panel to examine whether a separate mechanism is set up for the funding of defence and internal security. The five-member group, to be headed by Finance Commission Chairman N K Singh, comprises secretaries from the ministries of defence, home affairs and finance, besides a member of Commission. The mandate of the Group on Defence and Internal Security will be to examine whether a separate mechanism for funding of defence and internal security ought to be set up, and if so, how such a mechanism could be operationalised, the Commission said.

What

1. The Commission has already submitted its interim report to the President regarding devolution of tax receipts between the Centre and states/Union Territories. The final report is expected later in the year.
2. Meanwhile, the sixth meeting of the Advisory Council to the Commission was held to seek the views of the participants on the report of the XV-FC for 2020-21, the formula for horizontal devolution of central taxes and other recommendations contained in the report.
3. Views on the outlook for nominal GDP growth for the period 2021-22 to 2025-26, tax buoyancy and other macro-economic parameters too was discussed.
4. While discussing about the framework for vertical and horizontal devolution of taxes, the methodological innovations made in the Report were favourably commented upon, the Commission said.
5. The options for nominal GDP growth and resource mobilisation, as well as, the downsides and upsides to different possibilities therein were discussed in detail, particularly in the light of emerging global trends and patterns discernible in high-frequency, domestic indicators.
6. The centrality of strengthening the administration and technology platform of GST in ensuring fiscal balance of the Centre and the states was also emphasised.

### Another Panel for Fiscal Framework

1. The Finance Commission has also decided to form a panel to address issues of debt and fiscal deficit of states and centre.
2. The panel will help in designing a legal framework for a fiscal architecture for the states and centre. There is need for a fiscal roadmap for states and centre debt, and also their contingent liabilities and off-budget borrowings.
3. The 15th Finance Commission, in its report for 2020-21, had also pointed out that outstanding extra-budgetary liabilities of the state and central governments need to be clearly identified, and eliminated in a time-bound manner.
4. This needs to be done in a transparent way of reporting deficit and debt as provided in the amended FRBM Act of 2018, according to the report.

## IMMUNITY SCHEME FOR TAX DISPUTES

The government has introduced an immunity scheme — Vivaad se Vishwas — for five months (till June 30) for citizens to settle disputes on income tax, offering



relief from a “vexatious litigation process”, said Finance Minister Nirmala Sitharaman. Under the proposed scheme, one is required to pay only the amount of the disputed tax — on doing so, you get complete waiver of interest and penalty, provided the payment is by March 31. For a disputed penalty, where interest and fees are not connected with the disputed tax, one is required to pay only 25 percent of this total for settling the dispute.

What

1. If paying after March 31, one shall be required to pay 110 per cent of the disputed tax (the excess 10 per cent shall be limited to the amount of related penalty and interest, if any) and 30 percent of penalty, interest and fees.
2. This scheme is a replica of the Sabka Vishwas (Legacy Dispute Regulation) Scheme, 2019 (SVLDRS) for indirect tax litigation.
3. The hope is that this would unlock revenue blocked in long-drawn litigation at various forums. Sources in the department say the total value at stake in these disputes would be Rs 5-6 trillion.
4. There are 483,000 direct tax case disputes pending at various appellate forums — commissioner (appeals), income-tax appellate tribunal (ITAT), high courts and Supreme Court.
5. **The minister also proposed “faceless”** appeals, in addition to faceless scrutiny assessments. The aim is to eliminate human interface and ensure better compliance, transparency and adoption of global best practices. The objection, say experts, is that this could also lead to uncertainty, as it would do away any personal hearing.
6. Besides, the Budget has proposed a charter for taxpayers and having it enshrined in the Income Tax Act. Any tax system requires trust between payers and the administration. This will be possible only when taxpayer rights are clearly enumerated, the minister said.
7. To further ease the process of allotting the PAN (income tax) number, it has been decided that PAN will be allotted online instantly on the basis of Aadhaar, without one needing to fill a detailed application form.
8. Further, the Budget rationalises the process of registration in the case of charitable Trusts, making this completely electronic. Under this, a unique registration number shall be issued to all new and existing charity institutions. Further, a new charity institution which is yet to start its activities can get provisional registration for three years.

#### Improving tax administration

1. Further elimination of human interface through faceless appeals
2. No dispute but trust scheme, a measure to reduce direct tax litigations
3. Legal framework soon for preventing tax-related harassment
4. **TCS on remittance under RBI’s LRS** scheme in transaction over Rs 7 lakh
5. Dispute Resolution Panel will also deal with non-residents assessee’s assessments
6. Raises the limit of tax audit to Rs 5 crore turnover from Rs 1 crore
7. Indian citizen liable to pay tax who are not resident of any country

## PROPOSALS FOR SOCIAL WELFARE

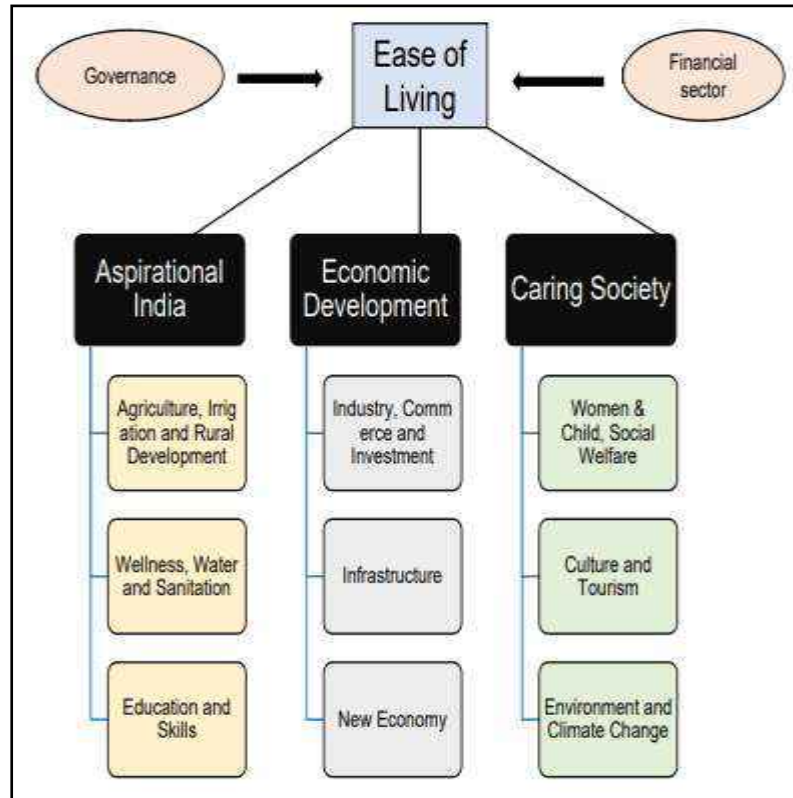
Union Finance Minister Nirmala Sitharaman, in her Budget 2020 speech, presented several proposals under three themes: aspirational society, economic development and caring society. **The FM split the ‘Caring for Society’ theme** into three sections namely women, child and social welfare, culture and tourism, and environment and climate change.

Women, child, and social welfare

1. The FM's statement that the **'Beti Bachao, Beti Padoo' scheme is a "huge success"** triggered an uproar in the House from the Opposition.
2. The gross enrollment ratio of girls across all levels is now higher than that of boys.

3. Allocating ₹35,600 crore for nutritional related programmes, the FM said that under Poshan Abhiyaan, launched in 2019, 6 lakh anganwadi workers have been equipped with smartphones to provide nutritional updates for 10 crore households. She added that a task force will be appointed to look into the issue of young girls entering motherhood.

4. Touching upon the need to fight manual scavenging, she said that the govt was working on technological alternatives for this.



5. She also proposed a budget provision of ₹85,000 crore for Scheduled Castes and Other Backward Classes and ₹ 53,700 crore for Scheduled Tribes. Ms. Sitharaman also allocated ₹9,500 crore for Divyaang programme for the benefit of senior citizens.

#### Culture and Tourism

1. In a measure to boost tourism, the FM proposed the setting up of an Indian Institute of Heritage and Conservation and to bestow it with the status of a deemed university.
2. She added that five new archaeological sites will be developed in Rakhigarhi in Haryana, Siva Sagar in Assam, Hastinapur in Uttar Pradesh, Adichanallur in Tamil Nadu, and Dholavira in Gujarat.
3. The Minister said that the Indian Museum in Kolkata will be re-curated, and that four more museums will be renovated and re-curated.
4. The government, she announced, will support the setting up of one tribal museum in Ranchi, Jharkhand. Additionally, the Ministry of Shipping will set up a Maritime Museum at the site of Sindhu-Saraswati civilisation in Lothal in Ahmedabad, Gujarat.

#### Environment and climate change

1. **India's commitment** towards tackling climate change made in Paris conference kick starts from January 1, 2021.
2. Old thermal power plants, whose emissions are above prescribed norms, will be advised to be closed down, and the land reclaimed will be put to alternative use.
3. To combat the issue of air pollution, and to ensure clean air in cities with around 1 million population, government has allocated ₹ 4,400 crore.

## SCIENCE AND TECHNOLOGY

### INDIA STRATEGY ON BLOCKCHAIN

A Niti Aayog discussion paper has made a case for using blockchain technology to resolve business and governance process inefficiencies. The draft discussion paper titled 'Blockchain: The India Strategy' **suggested that regulatory infrastructure should be put in place** for evolving a vibrant blockchain ecosystem. It also pitched for creation of a National infrastructure for the deployment of blockchain solutions with in-built fabric, identity platform and incentive platform.

What

1. The paper also suggested that the government should adopt blockchain solutions for the procurement process.
2. Blockchains can broadly be defined as a new type of network infrastructure (a way to organize how information and value moves around on the internet) that **create 'trust' in networks** by introducing distributed verifiability, auditability, and consensus.
3. Blockchain is seen as a technology with the potential to transform almost all industries and economies.
4. The World Economic Forum (WEF) anticipates that 10 percent of the global GDP will be stored on blockchain by 2025 and lists blockchain as one of 7 technologies that are anticipated to revolutionize various aspects of our lives.
5. Blockchain is only a chain of blocks. A **"block" contains digital information** which is stored in the **"chain" which is a public database**.
6. **Blockchain is actually a "distributed, decentralized, public ledger" which stores information about transactions and their participators, besides information that uniquely identifies a block.**
7. Any information stored in the blockchain is immutable and completely transparent. The system rests on the pillar of decentralisation.

#### Flashback

1. Blockchain technology was first outlined in 1991 by Stuart Haber and W. Scott Stornetta, but started attracting attention only from January 2009, with the launch of Bitcoin.
2. **Bitcoin's creator( s) known** by the pseudonym Satoshi Nakamoto called it **"a new electronic cash system that's fully peer-to-peer, with no trusted third party."**
3. In fact, being distributed among computers, it cannot be controlled by the government or any agency.
4. Governments and central banks are naturally weary as this may grow up to be an uncontrollable monster and unbundle all traditional banking and financial institutions.

### WHO NAMED 2019-NCOV

The UN health agency on February 11 announced that "COVID-19" will be the official name of the deadly virus disease from China, saying the disease represented a "very grave threat" for the world but there was a "realistic chance" of stopping it. "We now have a name for the disease and it's COVID-19," World Health Organization chief Tedros Adhanom Ghebreyesus told in Geneva. Tedros said that "co" stands for "corona", "vi" for "virus" and "d" for "disease", while "19" was for the year, as the outbreak was first identified on December 31. The name had been chosen to avoid references to a specific geographical location, animal species or group of people in line with international recommendations for naming aimed at preventing stigmatisation.

## What

1. WHO had earlier given the virus the temporary name of "2019-nCoV acute respiratory disease" and China's National Health Commission this week said it was temporarily calling it "novel coronavirus pneumonia" or NCP.
2. Under a set of guidelines issued in 2015, WHO advises against using place names such as Ebola and Zika — where those diseases were first identified and which are now inevitably linked to them in the public mind.
3. More general names such as "Middle East Respiratory Syndrome" or "Spanish flu" are also now avoided as they can stigmatise entire regions or ethnic groups.
4. WHO also notes that using animal species in the name can create confusion, such as in 2009 when H1N1 was popularly referred to as "swine flu". This had a major impact on the pork industry even though the disease was being spread by people rather than pigs.
5. People's names — usually the scientists who identified the disease — are also banned, as are "terms that incite undue fear" such as "unknown" or "fatal", the WHO said.
6. The virus has killed more than 1,000 people, infected over 42,000 and reached some 25 countries, with the WHO declaring a global health emergency.
7. Addressing scientists at the first international conference on combating the virus earlier on 11 February 2020, Tedros warned that the virus was a "very grave threat".
8. About 400 scientists were taking part in the two-day international meeting in Geneva called to review how the virus is transmitted and possible vaccines against it.
9. Participants will also discuss the source of the virus, which is thought to have originated in bats and reached humans via other "intermediary" species such as snakes or pangolins.

### What are coronaviruses?

1. Coronaviruses are a large family of viruses with some causing less severe common cold to more severe diseases such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).
2. While the SARS coronavirus is thought to be an animal virus from an as-yet-uncertain animal reservoir, perhaps bats, that spread to other animals (civet cats) and first infected humans in the Guangdong province of southern China in 2002, the MERS coronavirus was passed on from dromedary camels to humans in Saudi Arabia in 2012

## INDIA RANKS 17TH IN CORONAVIRUS IMPORT

**Of the country's most at risk of importing coronavirus cases**, India ranks 17th, researchers have found on the basis of a mathematical model for the expected global spread of the virus that originated in China's Wuhan area in December 2019. So far, India has reported 3 coronavirus positive cases- all from Kerala. Among the airports in India, Indira Gandhi International Airport in New Delhi is most at risk, followed by airports in Mumbai, Kolkata, Bengaluru, Chennai, Hyderabad and Kochi, according to the model.

## What

1. The new model for predicting global novel coronavirus cases has been developed by researchers from Humboldt University and Robert Koch Institute in Germany. The spread of the virus on an international scale is dominated by air travel, said the study.

2. Wuhan, the seventh largest city in China with 11 million residents, was the relevant major domestic air transportation hub with many connecting international flights before the city was effectively quarantined on January 23, 2020, and the Wuhan airport was closed. By then the virus had already spread to other Chinese provinces as well as other countries," it added.
3. The top 10 countries and regions at risk of importing coronavirus cases are: Thailand, Japan, South Korea, Hong Kong, Taiwan, USA, Vietnam, Malaysia, Singapore and Cambodia, according to the model.
4. While Thailand's national import risk is 2.1 per cent, it is 0.2 per cent for India, found the research.
5. The foundation of the model is the worldwide air transportation network (WAN) that connects approximately 4,000 airports with more than 25,000 direct connections.
6. The model accounts for both, the current distribution of confirmed cases in mainland China as well as airport closures that were implemented as a mitigation strategy.
7. This network theoretic model is based on the concept of effective distance and is an extension of a model introduced in the 2013 paper "The Hidden Geometry of Complex, Network-Driven Contagion Phenomena" published in the journal Science.

## MAVEN MAKES SURPRISING DISCOVERY

**NASA's ongoing Mars mission** through its Mars Atmosphere and Volatile Evolution (MAVEN) spacecraft has made surprising discoveries that scientists believe may help understand the disruptive phenomena on Earth. The spacecraft stumbled upon **'layers' and 'rifts'** in the ionosphere of Mars, which is the electrically charged part of the upper atmosphere of the red planet. These layers are close to everyone living on Earth and can be detected by anyone with a radio, as stated by NASA.

What

1. This unexpected discovery by MAVEN spacecraft shows that Mars is a unique laboratory for scientists to explore and better understand this highly disruptive phenomenon.
2. Has your favourite radio station ever jammed or been replaced by another station? The reason could be these layers of electrically charged gas, called **'plasma'**.
3. These layers are present in the upper-most region of the **Earth's**

### Flashback

1. Mars Atmosphere and Volatile Evolution (MAVEN) is a spacecraft developed by NASA that went into orbit around Mars to study the planet's atmosphere.
2. Mission goals include determining how the atmosphere and water, presumed to have once been substantial, were lost over time.
3. MAVEN was launched aboard an Atlas V launch vehicle at the beginning of the first launch window on November 18, 2013.
4. **NASA's MAVEN (Mars Atmosphere and Volatile Evolution) spacecraft has discovered "layers" and "rifts" in the electrically charged part of the upper atmosphere (the ionosphere) of Mars.**
5. The phenomenon is very common at Earth and causes unpredictable disruptions to radio communications. However, we do not fully understand them because they form at altitudes that are very difficult to explore at Earth.
6. The unexpected discovery by MAVEN shows that Mars is a unique laboratory to explore and better understand this highly disruptive phenomenon.

atmosphere, also called the ionosphere. Acting like giant mirrors in the sky, these layers can last for several hours causing radio signals to interfere with local



- transmissions, just like how when two people try to talk over one another.
4. The layers could also disrupt the radio communications made by aircraft and ships and can blind military radar, as reported by NASA.
  5. **These layers are formed 100 km above the Earth's surface** where the air is too thin for an aircraft to fly and too thick for any satellite to orbit.
  6. **NASA's report said that** the existence of these layers have been known for about 80 years now, but little is known about what goes on inside them as no satellite can get low enough to reach the layers. However, at Mars, it is easier for these satellites to hover at a lower altitude and can sample these features directly.
  7. The recent measurements through **MAVEN's scientific instruments revealed unexpected spikes in the abundance of plasma in Mars' ionosphere.**
  8. Joe Grebowsky, a former MAVEN project scientist at NASA, used his experience with **rocket flights to recognise the spikes. The study through MAVEN's Mars mission** proves that Mars offers what Earth cannot, a place where these layers can be reliably explored.
  9. The new discoveries through MAVEN have given NASA scientists a better understanding of the fundamental processes that underpin these layers, and future exploration of Mars will allow the scientists to build better scientific models of how these layers are formed.
  10. Perhaps someday in the future, NASA expects to gain new insights from the layers **found in Mars's ionosphere which may help them in forecasting those layers at Earth** as well. This, in turn, will provide for more reliable radio communication for each one living on Earth.

## SOLAR ORBITER BLASTS OFF

Europe and NASA's Solar Orbiter rocketed into space on 10 February 2020 night on an unprecedented mission to capture the first pictures of the sun's elusive poles.

The \$1.5 billion spacecraft will join NASA's Parker Solar Probe, launched 1 1/2 years ago, in coming perilously close to the sun in order to unveil its secrets. While Solar Orbiter won't venture close enough to penetrate the sun's corona, or crown-like outer atmosphere, like Parker, it will maneuver into a unique out-of-plane orbit that will take it over both poles, never photographed before. Together with powerful ground observatories, the sun-staring space duo will be like an orchestra, according to Gunther Hasinger, the European Space Agency's science director.

What

1. Every instrument plays a different tune, but together they play the symphony of the sun.
2. Solar Orbiter was made in Europe, along with nine science instruments. NASA provided the 10th instrument and arranged the late-night launch from Cape Canaveral.
3. Nearly 1,000 scientists and engineers from across Europe gathered with their U.S. colleagues under a full moon as United Launch Alliance's Atlas V rocket blasted off, illuminating the sky for miles around. Crowds also jammed nearby roads and beaches.
4. The rocket was visible for four full minutes after liftoff, a brilliant star piercing the night sky. Europe's project scientist Daniel Mueller was thrilled, calling it "picture perfect".
5. Solar Orbiter \_ a boxy 4,000-pound (1,800-kilogram) spacecraft with spindly instrument booms and antennas \_ will swing past Venus in December and again next year, and then past Earth, using the planets' gravity to alter its path.

6. Full science operations will begin in late 2021, with the first close solar encounter in 2022 and more every six months.
7. At its closest approach, Solar Orbiter will come within 26 million miles (42 million kilometers) of the sun, well within the orbit of Mercury.
8. Parker Solar Probe, by contrast, has already passed within 11.6 million miles (18.6 million kilometers) of the sun, an all-time record, and is shooting for a slim gap of 4 million miles (6 million kilometers) by 2025. But it's flying nowhere near the poles. That's where Solar Orbiter will shine.
9. The sun's poles are pockmarked with dark, constantly shifting coronal holes. They're hubs for the sun's magnetic field, flipping polarity every 11 years.

#### Flashback

1. The U.S.-European Ulysses spacecraft, launched in 1990, flew over the sun's poles, but from farther afield and with no cameras on board. It's been silent for more than a decade.
2. Europe and NASA's Soho spacecraft, launched in 1995, is still sending back valuable solar data.
3. Altogether, more than a dozen spacecraft have focused on the sun over the past 30 years. It took until now, however, for technology to allow elaborate spacecraft like Parker and Solar Orbiter to get close without being fried.

## AI TECH TO CONVERT BRAIN SIGNALS

Indian Institute of Technology (IIT) Madras researchers have developed an Artificial Intelligence technology to convert brain signals of speech impaired humans into language. The other major application for this field of research is that the researchers can **potentially interpret nature's signals such as plant photosynthesis process** or their response to external forces, the institute said.

What

1. A team of researchers led by Vishal Nandigana, assistant professor, Fluid Systems Laboratory, Department of Mechanical Engineering, is working on this area of research.
2. Electrical signals, brain signal or any signal, in general, are waveforms which are decoded to meaningful information using physical law or mathematical transforms such as Fourier Transform or Laplace transform.
3. These physical laws and mathematical transforms are science-based languages discovered by renowned scientists such as Sir Isaac Newton and Jean-Baptiste Joseph Fourier.

#### Flashback

1. Artificial intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems.
2. Specific applications of AI include expert systems, natural language processing (NLP), speech recognition and machine vision.
3. AI programming focuses on three cognitive skills: learning, reasoning and self-correction.
4. The term artificial intelligence was coined in 1956, but AI has become more popular today thanks to increased data volumes, advanced algorithms, and improvements in computing power and storage.
5. Early AI research in the 1950s explored topics like problem solving and symbolic methods. In the 1960s, the US Department of Defense took interest in this type of work and began training computers to mimic basic human reasoning.

4. The output result is the ionic current, which represents the flow of ions, which are charged particles. These electrically driven ionic current signals are worked on to be interpreted as human language meaning speech.
5. This would tell us what the ions are trying to communicate with us. When we succeed with this effort, we will get electrophysiological data from the neurologists to get brain signals of speech impaired humans to know what they are trying to communicate.
6. The other major application of this field of research potentially is that can it interpret nature's signals, like plant photosynthesis process or their response to external forces when their real data signal is collected.
7. The big breakthrough will be can we interpret what plants and nature is trying to communicate to us. This will help in predicting monsoons, earthquakes, floods, Tsunami and other natural disasters using our Artificial Intelligence and Deep Learning algorithms.

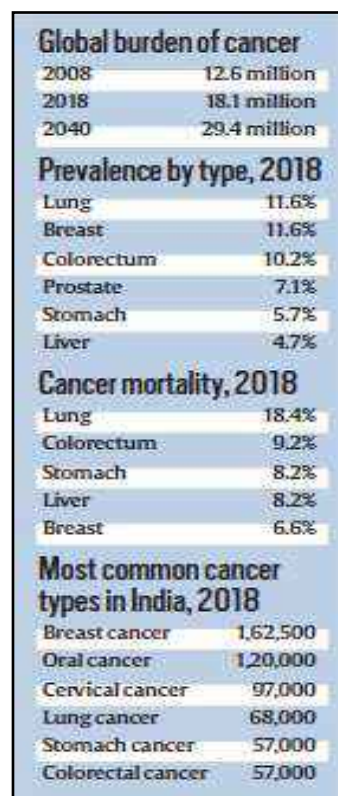
## MISCELLANEOUS

### WORLD CANCER REPORT

The UN health agency on 4 February 2020 warned cancer cases would rise by 81 percent in low- and middle-income countries by 2040 because of a lack of investment in prevention and care. The Geneva-based World Health Organization (WHO) said in a report that these countries had focused their limited resources on combating infectious diseases and improving maternal and child health instead of fighting cancer. It said they often had the highest cancer mortality too.

What

1. This is a wake-up call to all of us to tackle the unacceptable inequalities between cancer services in rich and poor countries, Ren Minghui, a WHO Assistant Director General, said in the report.
2. If people have access to primary care and referral systems then cancer can be detected early, treated effectively and cured.
3. The annual report found that overall cancer cases in the world would rise by 60 percent by 2040 and said tobacco use was responsible for 25 percent of cancer deaths.
4. India had an estimated 1.16 million new cancer cases in 2018, according to a report by the World Health Organization (WHO), which said that one in 10 Indians will develop cancer during their lifetime and one in 15 will die of the disease.
5. WHO and its specialized International Agency for Research on Cancer (IARC) has released two reports: one aimed at setting the global agenda on the disease; the other focused on research and prevention.
6. The World Cancer Report said that according to the estimated cancer burden in India in 2018, there are about 1.16 million new cancer cases, 784,800 cancer deaths, and 2.26 million 5-



year prevalent cases in India's population of 1.35 billion.

7. In India, the six most common cancer types were breast cancer (162,500 cases), oral cancer (120,000 cases), cervical cancer (97,000 cases), lung cancer (68,000 cases), stomach cancer (57,000 cases), and colorectal cancer (57,000). Together, these account for 49 per cent of all new cancer cases.
8. Of the 570,000 new cancer cases in men, oral cancer (92,000), lung cancer (49,000), stomach cancer (39,000), colorectal cancer (37,000), and oesophageal cancer (34,000) account for 45 per cent of cases.
9. The report added that of the 587,000 new cancer cases in women, breast cancer (162,500), cervical cancer (97,000), ovarian cancer (36,000), oral cancer (28,000), and colorectal cancer (20,000) account for 60 per cent of cases.
10. Cancer patterns in India are dominated by a high burden of tobacco-related head and neck cancers, particularly oral cancer, in men and of cervical cancer in women; both of these cancer types are associated with lower socioeconomic status.

## DEFEXPO 2020 INAUGURATED

Prime Minister Narendra Modi on 5 February 2020 inaugurated the DefExpo, India's biennial military exhibition, which seeks to showcase the potential of the country to become a global defence manufacturing hub. Uttar Pradesh will be one of the biggest hubs of defence manufacturing in the coming future, PM Modi said while inaugurating the DefExpo.

What

1. Over 150 military manufacturers and defence ministers from over 30 countries are attending the five-day mega exhibition.
2. The 11th edition of DefExpo promises to bring new technologies and solutions on a single platform for defence manufacturing firms from India and abroad.
3. The main theme of the Expo is 'India: The Emerging Defence Manufacturing Hub' and the focus will be on 'Digital Transformation of Defence'.
4. Reflecting on the government's focus on 'Make in India', the DefExpo 2020 would offer an opportunity for the Indian defence industry to showcase its capabilities and promote its export potential.
5. The fifth India-Russia Military Industry Conference will also be held on the sidelines of the DefExpo with over 100 Russian and over 200 Indian industry leaders expected to participate.
6. Since 2016, the DefExpo has been changing venues after former Defence Minister Manohar Parrikar decided to shift it to Goa from Delhi.
7. Since then, the event was held in Chennai when Nirmala Sitharaman was the Defence Minister and now it has been shifted to Lucknow.

## SECTION 3 OF THE DRUGS AND COSMETICS ACT NOTIFIED

To ensure that all medical devices meet certain standards of quality and efficacy, the Union Health Ministry on 11 February 2020 notified medical equipment used on humans or animals as "drugs" under Section 3 of the Drugs and Cosmetics

Act, with effect from April 1, 2020. The ministry, through a gazette notification, also released the Medical Devices Amendment Rules, 2020, for mandatory registration of medical devices.

What

1. The aim is to regulate all medical devices so that they meet certain standards of quality. Besides it will also make medical device companies accountable for quality and safety of their products.
2. In pursuance of sub-clause (iv) of clause (b) of Section 3 of the Drugs and Cosmetics Act, 1940, the Central Government, after consultation with the Drugs Technical Advisory Board, hereby specifies the following devices intended for use in human beings or animals as drugs with effect from the April 1, 2020.
3. Once notified, the manufacture, import and sale of all medical devices will need to be certified by the Central Drugs Standard Control Organisation (CDSCO).
4. All devices, including instruments, apparatus, appliances and implants, whether used alone or in combination for various purposes like diagnosis, prevention, monitoring, treatment, alleviation of any disease, investigation, replacement or modification or support of the anatomy among others, will be regulated under the legislation.
5. At present, only 23 categories medical devices are regulated under the law.
6. The country's highest advisory body on technical issues related to drugs and medical devices, the Drugs Technical Advisory Board (DTAB), had in April 2019 recommended that all medical devices should be notified as drugs under the Drugs and Cosmetics Act.
7. Once the notification is issued, the CDSCO will be the nodal authority to investigate complaints related to the quality and safety aspects of medical devices and can suspend the registration or cancel licences of firms.
8. More so, the ministry, through a gazette notification, released Medical Devices Amendment Rules, 2020, for mandatory registration of medical devices.
9. The medical devices referred shall be registered with the central licensing authority via an online portal established by the CDSCO for the purpose.
10. The manufacturer of a medical device or any person who imports any medical device will have to upload the information related to that medical device for registration on the "Online System for Medical Devices" established by the CDSCO for this purpose.
11. Further, the notification also provides timelines for medical devices that will be notified under the Act with effect from April 1 -- 30 months for low and moderate risk devices (Classes A and B), 40 months for moderately high and high risk devices (Classes C and D).
12. Upon the expiry of these time periods, all provisions of the Medical Devices Rules 2017 will apply to the respective devices.
13. While this is a positive step, as per the timeline, it will still take a long time before many higher risk devices are regulated, said Malini Aisola from the All India Drug Action Network.
14. Consumer groups remain skeptical about how the CDSCO's current ability to regulate devices under the wider scope. We are particularly wary of the CDSCOs competence, expertise and most importantly its commitment towards patient safety



given its dismal track record.

## RK PACHAURI DIED

RK Pachauri, 79, founder director of New Delhi-based think tank The Energy and Resources Institute (Teri) and former chairman of the UN's Intergovernmental Panel on Climate Change (IPCC), passed away on 13 February 2020. He was battling cardiac ailments and was put on life support in a Delhi hospital on 12 February 2020. He had undergone open heart surgery at Fortis Escorts Heart Institute after suffering a stroke in Mexico in July last year.

What

1. Under his leadership, IPCC got the Nobel Peace Prize jointly with former US vice-president Al Gore. The prize recognised IPCC for its "efforts to build and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures needed to counteract such change." He headed the body from 2002 to 2015.
2. Pachauri resigned from Teri in 2015 in the wake of allegations of sexual harassment.
3. Pachauri became chief executive of Teri in 1981 and headed the institute for more than three decades. He had to quit his post of executive vice-chairman in 2015 in the wake of allegations of sexual harassment, stalking and criminal intimidation.
4. In October 2018, a Delhi court had framed molestation charges against Pachauri, who had denied the charges. The court had given him anticipatory bail in 2015.
5. Pachauri was honoured with Padma Bhushan in 2001 and Padma Vibhushan in 2008.
6. An alumnus of the Indian Railways Institute of Mechanical and Electrical Engineering in Jamalpur, Bihar, Pachauri served in various positions in the Indian Railways, including at the Diesel Locomotive Works in Varanasi.
7. He had served in several organisations in different positions before founding Teri.

## SC REFUSES TO EXTEND BS-IV DEADLINE

The Supreme Court on 14 February 2020 refused to entertain a plea by automobile dealers for permission to sell and register vehicles following the Bharat Stage-IV standard emission norms beyond April 1, 2020. The court had, in 2018, banned the sale and registration of these vehicles beyond this cut-off date. The plea filed by the automobile dealers, which came up before a Bench of Justices Arun Mishra and Deepak Gupta, sought an extension of a month because they were staring at the prospect of unsold **inventory**. **"There is a slowdown... Kindly allow us to sell BS-IV vehicles to clear stock,"** they argued. The Bench pointed out that the cut-off date was passed in an order in 2018.

What

1. You should not have produced BS-IV vehicles after that. Even after filing this application, you have produced these vehicles, the court responded. When the **association's counsel urged the court that their application was like a "mercy plea,"** **the bench said, "No"**.
2. On October 24, 2018, a three-judge Bench led by Justice (now retired) Madan B. Lokur had concluded that **pollution levels have reached an "alarming and critical"**

- level all over India.
3. Bharat Stage (BS) emission norms are standards instituted by the government to regulate output of air pollutants from motor vehicles. The BS-IV norms were enforced across the country since April 2017.
  4. In 2016, the Centre had announced that India would skip the BS-V norms altogether and adopt BS-VI norms by 2020.
  5. On February 19, 2016, the Indian Ministry of Road Transport and Highways (MoRTH) issued a draft notification of Bharat Stage (BS) VI emission standards for all major
  6. on-road vehicle categories in India.
  7. The standards apply to light- and heavy-duty vehicles, as well as two- and three-wheeled vehicles. As proposed, the BS VI standards will go into effect for all vehicles in these categories manufactured on or after April 1, 2020.
  8. The draft BS VI proposal specifies mass emission standards, type approval requirements, and on-board diagnostic (OBD) system and durability levels for each vehicle category and sub-classes therein. In addition, reference and commercial fuel specifications are included in the BS VI proposal.
  9. The adoption of the proposed BS VI emission standards will essentially bring Indian motor vehicle regulations into alignment with European Union regulations for light-duty passenger cars and commercial vehicles, heavy-duty trucks and buses, and two-wheeled vehicles.

#### Background

1. The first Indian emission regulations were idle emission limits which became effective in 1989.
2. These idle emission regulations were soon replaced by mass emission limits for both gasoline (1991) and diesel (1992) vehicles, which were gradually tightened during the 1990s.
3. Since the year 2000, India started adopting European emission and fuel regulations for four-wheeled light-duty and heavy-duty vehicles. **India's own** emission regulations still apply to two- and three-wheeled vehicles.
4. The foundation for automotive emission standards in India since the early 2000s is contained in two reports from the Indian Planning Commission.
5. The National Auto Fuel Policy, announced on October 6, 2003, envisioned a phased program for introducing Euro 2-4 emission and fuel regulations by 2010.
6. In order to establish limits beyond Bharat Stage IV, the Indian Planning Commission established an Expert Committee in 2013 to draft an updated Auto Fuel Policy, Auto Fuel Vision and Policy 2025, that was published in May 2014.
7. While legislators are not required to adhere strictly to the recommendations contained in these reports, they serve as a starting point for subsequent legislative action to establish the implementation schedule and other details of automotive emission standards.