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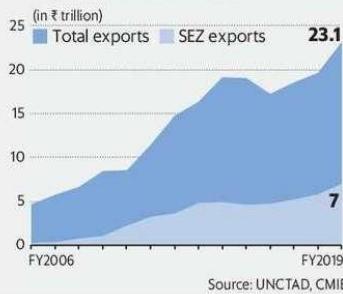
TOPIC 1. SEZS

EXPORT ENIGMA

Emerging Asian economies account for three-fourths of all SEZs in the world.



SEZ exports as a share of total exports is relatively modest in India.



SEZs spread



1. In a way, 2020 signals the end of SEZs. For developers of Special Economic Zones (SEZs), the sunset clause for income-tax exemptions kicked in in April 2017. For units in SEZs, the sunset clause became effective in April 2020. Ergo, both on direct and indirect taxes, there are no fiscal concessions.
2. By the end of July 2020, there were 357 notified SEZs, in addition to 7 Union government and 12 state government/private SEZs that were established before the SEZ legislation of 2005. There were 5,524 units in SEZs. However, by end March 2020, only 248 SEZs were operational. Most private operational SEZs were in IT/ITES and enthusiasm for SEZs tapered off around 2017.
3. In absolute terms, growth in exports from SEZs might seem impressive, but as a share of exports, they never became the driver they were expected to be.
4. In the World Bank's Logistics Performance Index (based on customs, infrastructure, international shipments, logistics competence, tracking and tracing and timeliness), India's score and ranking have consistently improved. But logistics isn't only about what happens at the port; it is also about transport infrastructure. That is, it is also about what happens inside borders, though for IT/ITES, physical infrastructure is less of an issue.
5. If one ignores Himalayan states and the North East, major coastal states are Andhra, Gujarat, Karnataka, Kerala, Maharashtra, Odisha, Tamil Nadu and West Bengal. While it is difficult to unambiguously identify any export as originating from a specific state, one would expect exports (at least the merchandise variety) to originate from these states and not from landlocked states like Assam, Bihar, Chhattisgarh, Haryana, Jharkhand, MP, Punjab, Rajasthan, UP, Telangana or J&K.
6. Except for the rare or perishable item, air freight makes exports uncompetitive. Indeed, 70% of exports originate from Maharashtra, Gujarat, Karnataka, Tamil Nadu and Telangana. At best, one can ask, why don't Andhra, Kerala, Odisha and West Bengal perform better?
7. Whether it is a recent export preparedness ranking done of the states, or Economic Survey's data, we will have Gujarat, Maharashtra and Tamil Nadu at the top. Once one takes away the USP of fiscal concessions, for most exports, competitive advantage only exists along the coast, where seaports are.
8. That's the reason, as part of the Sagarmala Project, the idea is now to have coastal economic zones (CEZs), coastal economic units (CEUs) and port-led industrial development and exports. This is what SEZs should have been in the first place, as the first lot of Export Processing Zones were.

9. With tax concession-induced SEZs out of the way, these CEZs (at least the first set) will be in Gujarat, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu, Andhra, Odisha and West Bengal, with specific links to ports and manufacturing catchment areas in specific districts.
10. Any enclave-driven liberalization needs to have focus, like CEZs, and cannot be indiscriminate, like SEZs. To understand this shift, we have to first examine why India's policy makers chose to blindly follow Chinese model.

The early days

11. China's SEZs (Shenzhen, Zhuhai and Shantou in Guangdong province and Xiamen in Fujian province) were established in 1980 with objectives of stimulating exports and attracting foreign direct investment (FDI) and new technology. The objective wasn't the transformation of the fishing village of Shenzhen. That was an indirect consequence. In those early years, China liberalized selectively, in enclaves.
12. As liberalization spread, an entire province like Hainan, not just a geographical area within a province, became an SEZ. As liberalization spread further, coastal cities were added to such enclaves, though these weren't de jure SEZs. The adjective "coastal" is critical. SEZs and these cities were along coast, close to Hong Kong and Macao.
13. Chinese SEZs were successful by any yardstick (shares of exports or FDI inflows). But as liberalization extended beyond enclaves, those shares declined. The Chinese did it in 1980. India sought to do it in 1965. Kandla Free Trade Zone (FTZ) was inaugurated by the then Prime Minister Lal Bahadur Shastri in March 1965.
14. The noted civil servant, Nagarajan Vittal, spent part of his career as Development Commissioner for Kandla FTZ. His wife, Gita Vittal, wrote her memoirs (in 2007) and mentioned what N. Vittal said when he was offered a post 13 others had refused. "For nine years the zone has been a failure. If I go and fail, I will be one more on the list of failures, but if I succeed, I would have done something worthwhile." Despite Vittal improving matters a bit, Kandla failed, compared to what it was expected to achieve.
15. Other than Kandla, we had Santacruz Electronics Export Processing Zone (EPZ) in 1973, Chennai, Falta (in West Bengal) and Cochin in 1984, Noida in 1985 and Visakhapatnam in 1989 (it became functional in 1994). We often forget there was limited import liberalization in 1976. We certainly forget that in 1976, Union Cabinet turned down a proposal to start EPZs in Calcutta, Chennai (Madras) and Cochin.
16. The argument advanced against the EPZ proposal was no different from an issue confronting us today. If there is general import liberalization, elimination of QRs (quantitative restrictions) on imports and reduction in tariffs, what's the point of FTZ/EPZ? But regardless of that 1976 Cabinet question, EPZs did result.
17. So, what's the difference between free port, FTZ, EPZ, SEZ And FTWZ (free trade and warehousing zone)? The terms are often used as synonyms. If nomenclature is carefully used, a rare occurrence, FTZ is a duty-free area, primarily for warehousing and distribution, such as for re-exports. Ergo, FTZs tend to be near ports or airports.
18. EPZs incentivize not just re-exports, but also exports. A unit in an EPZ can also typically sell in the domestic tariff area (DTA). Recognizing links between trade and investments, SEZs target inward FDI. A free port is a large geographical area that encompasses all these objectives. In 1980-81, the 100% export-oriented unit (EOU) scheme was started, duplicating every incentive FTZ/EPZ possessed, without locational restrictions.

China's successful formula

19. Why did SEZs succeed in China? In a long list of answers, there will be proximity to coasts; networks, and not just proximity, with Hong Kong and Macao; de facto greenfield infrastructure and real estate development; simple procedures; FDI; and cheap and flexible labour supply because of China's "hukou" system (until 1995, China lacked basic labour rights).
20. India's FTZs/EPZs were constrained by lack of links to anything like Hong Kong or Macau, inferior infrastructure, complicated procedures, rigid labour laws and non-availability of skilled labour. For instance, restrictions on sales to DTA led to additional procedural hassles and didn't simplify matters. Consequently, labour-intensive manufacturing and exports never took off.
21. As with China, if liberalization extends elsewhere, enclaves become less attractive. So, 100% EOUs could be set up anywhere, closer to raw material sources, where ecosystems, suppliers and skilled labour existed, where infrastructure was better. One shouldn't forget, one of Kandla FTZ's objectives was industrializing a backward region, hardly what FTZ was expected to do in any other country.
22. In 1980, the Tandon Committee on export strategies criticized the then solitary FTZ for being unclear in objectives, a bane of subsequent EPZs too. Not surprisingly, till 2000, the share of all FTZs/EPZs in India's exports gradually increased to around 4.5%, much lower than expected.
23. Instead, 100% EOUs thrived, until withdrawal of direct tax exemptions in 2012 made the scheme unattractive. (GST removed customs duty and excise benefits, not to speak of EPCG and duty drawback, available for non-EOUs too.) Withdrawal of such fiscal incentives tilted the balance towards SEZs.

24. SEZs were first mentioned in Exim Policy for 2000-01. A few sentences from the then commerce minister Murasoli Maran's speech will identify the rationale.
25. "I am proposing a major step of establishing, as in China, SEZs in different parts of the country...The idea basically is that in these areas export production can take place free from the plethora of rules, and regulations governing import and export...Any State Government or corporate entity or individual can furnish proposals for setting up such zones...In the meanwhile, it is also proposed to convert the existing Export Processing Zones into SEZs ."
26. In 2000, we thought of an enclave idea China had given up.
27. The instances the commerce minister gave of simpler rules were about taxes and tax-related concessions. In the tax reform agenda, both direct and indirect, fiscal concessions were on their way out, even if implementation of the agenda took time. Therefore, unless there was some other competitive edge, like 100% EOUs, SEZs were bound to wither away.
28. In addition, with a desire to incentivize states to push the export cause, state governments were allowed to have their own SEZs, with some promised fiscal support. There was mention of IDA (Industrial Disputes Act), but there was never any question of labour laws in SEZs being different from general labour laws. Article 14 of the Constitution doesn't permit "hukou" or differential labour laws between an enclave and the rest of the country.

The labour issue

29. It was unrealistically hoped (in 2000-01) that SEZs would have distinct and more flexible labour laws. That's not possible. But there is a caveat. This is possible under Article 243Q(I) of the Constitution, for an industrial township. National Investment and Manufacturing Zones (NIMZs), distinct from SEZs/CEZs on grounds of governance structure and exit policies, represent that idea.
30. Several NIMZs have been approved. I am sceptical of those located away from DMIC (Delhi Mumbai Industrial Corridor) and DFCs (Dedicated Freight Corridors). There is no getting away from physical infrastructure. The others are likely to follow the failed SEZ route.
31. Three decades ago, at a seaport, I watched cargo (food-grains) being loaded on a ship. Labourers carried them up on their backs, in gunny bags. I had expected more mechanization. When I asked, I was told imports were more mechanized. Why? "Gravity makes it easier," said one expert. "We mechanized imports during PL-480 days, but not exports," said another. Both self-proclaimed experts might have been wrong. But the anecdote has a point.
32. There is an export culture in India that transcends policies. Policies historically encouraged import substitution and fettered this culture. Therefore, the act of exports required subsidies and fiscal concessions. In a broader context, we face the issue of devising World Trade Organisation-compatible incentives, since export subsidies are not WTO-compatible. In the narrower enclave liberalization context, SEZs/CEZs will also have to look beyond tax concessions. The states need to recognize multiplier benefits from exports; and not be interested simply because there is central fiscal assistance.
33. In that sense, the right lessons still need to be learned from SEZs elsewhere in the world, including China of the 1980s.

TOPIC 2. INVITS

1. While Union Cabinet chaired by Prime Minister Narendra Modi had approved the National Highways Authority of India (NHAI) setting up Infrastructure Investment Trust(s) (InvIT) in December 2019, the company has recently started meeting investor groups, as it prepares to come up with its InvIT issue.
2. The issue will enable NHAI to monetise its completed National Highways that have a toll collection track record of at least one year. The NHAI reserves the right to levy toll on identified highways and it will help the company raise funds for more road development across the country.

What are InvITs?

3. Infrastructure investment trusts are institutions like mutual funds, which pool investment from various categories of investors and invest them into completed and revenue-generating infrastructure projects, thereby creating returns for investor. Capital market regulator notified Sebi (Infrastructure Investment Trusts) Regulations, 2014 on 26/09/14 and these trusts are likely to help facilitate investment in infrastructure sector.
4. Structured like mutual funds, they have a trustee, sponsor(s), investment manager and project manager. While trustee (certified by Sebi) has responsibility of inspecting performance of an InvIT, sponsor(s) are promoters of company that set up InvIT. In case of Public–private partnership (PPP) projects, it refers to the infrastructure developer or a special purpose vehicle holding the concession.
5. While the investment manager is entrusted with the task of supervising the assets and investments of the InvIT, the project manager is responsible for the execution of the project.
6. NHAI's InvIT will be a Trust established by NHAI under Indian Trust Act, 1882 and SEBI regulations. The InvIT Trust will be formed the objective of investment primarily in infrastructure projects.

How does it work?

7. While fund will be raised by monetising completed NHs, regulations say that project SPV would distribute not less than 90 % of net distributable cash flow to trust in proportion of its holding in each of the project SPV and further not less than 90 % of the net distributable cash flow of the trust will get distributed to the unitholders. The unitholders will get the distributions at least once every six month.
8. The fund raised can be invested in the project SPVs by way of an issue of debt. The trust can utilise it to repay their loans or even for prepayment of certain unsecured loans and advances availed by such project SPVs from the sponsor, the project manager and certain members of the sponsor group.
9. Indian InvIT market is not yet mature and has supported formation of 10 InvITs till date - in roads, power transmission, gas transmission and telecom towers sectors - of which only two are listed, according to a report of the task force on National Infrastructure Pipeline. The InvITs listed on the stock exchange are IRB InvIT Fund and India Grid Trust.
10. The listed are required to maintain a maximum-leverage ratio of 49 %, which can be increased to 70 % subject to certain conditions, such as six continuous distributions to unit-holders and AAA-rating.
11. With the significant amount of funding required in the infrastructure sector and a gap in availability of long-term funds, this structure helps close that gap by enabling fund raising from capital markets.

Why does NHAI need fund and how will it benefit the economy?

12. At a time when private sector investment in the economy has declined, fund-raising by NHAI and spending on infrastructure will not only provide a fillip to the economy, but will also crowd-in private sector investment. So NHAI's InvIT offer, which is expected to come soon, is a way for the government to tap alternative sources of financing to boost public spending in the roads and infrastructure sector.
13. It is important to note that in October 2017, Centre had launched Bharatmala Pariyojana, its flagship highway development programme, for development of 24,800 km of roads at a total investment of Rs 5,35,000 crore.
14. In order to complete the projects, NHAI needs adequate funds and one of the options is to monetise the completed and operational NH assets and offer attractive schemes to private players to invest in construction of National Highways.

How does it benefit the investor?

15. A retail or even a large financial investors may not be typically able to invest in infrastructure projects such as roads, power, energy etc. InvITs enable these investors to buy a small portion of the units being sold by the fund depending upon their risk appetite.
16. Given that such trusts comprise largely of completed and operational projects with positive cash flow, the risks are somewhat contained. The investors can benefit from the cash flow that gets distributed as well as in capital appreciate of the units. Unitholders also benefit from favourable tax norms, including exemption on dividend income and no capital gains tax if units are held for more than three years.

TOPIC 3. INFLATION

TWIN TROUBLE

Chart 1

India's long-period inflation level compares well with Asian peers

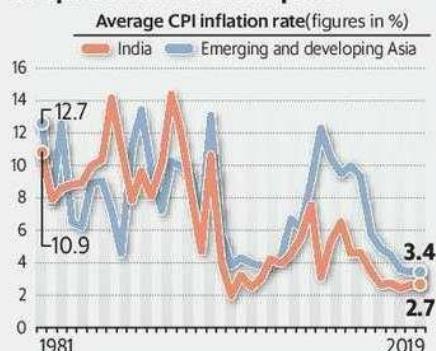
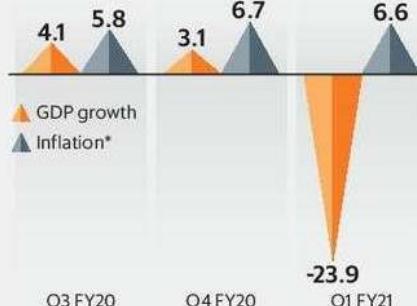


Chart 2

The Indian economy is under the grip of low growth and high inflation



*measured as CPI or retail inflation

Source: IMF, World Economic Outlook Database, October 2019, CMIE

1. India adopted flexible inflation targeting (FIT) as a mandate for its central bank in 2016. The inflation target comes up for review next year. The mandate of the first monetary policy committee (MPC), formed in the wake of the institution of FIT, ends in March 2021.
2. In the meantime, the covid-19 pandemic has brought in its wake enormous economic uncertainty. Once the current economic contraction in 2020-21 passes, low growth and medium to high inflation may be with us for a year or two. In the meantime, the US Federal Reserve has signalled that it would actively seek and tolerate higher inflation in America.
3. Given these extraordinary and historical developments, what should be the operational target for the Reserve Bank of India in the coming years? Should the monetary policy continue to be based on FIT or something else? What would serve India better? To come up with the answers to these questions, it is important to first examine the role of central banks in managing inflation in developed and developing nations, which could then potentially offer an alternative to FIT for India.

Inflation targeting

4. The Reserve Bank of New Zealand (RBNZ) adopted inflation targeting formally in February 1990. It was the first country to do so. Graeme Wheeler was the bank's governor for five years, from 2012 to 2017. Since RBNZ showed the way for modern central banks, it was only appropriate that RBNZ again show the way for the paradigm shift that is needed.
5. Graeme Wheeler delivered a set of remarks on central banks and their omnipotence in an honest speech in October 2015. He said, "Monetary policy was, however, relatively powerless to influence the decisions that determine long-run economic performance and distributional outcomes. For example, over the long run, monetary policy can do little to generate higher spending by households and firms. Even in the shorter term, monetary policy's influence may be low in an environment where debt levels are high and where there is considerable uncertainty about economic prospects. Monetary policy can influence risk-taking in asset markets, but this does not necessarily translate into risk-taking in long-term real assets—requiring the investment and entrepreneurial decisions that underpin productivity growth and hence long-run improvements in living standards. Similarly, the Reserve Bank (RBNZ) is unable to influence long-term real interest rates. These are affected by a range of factors, including global savings and investment flows, risk premia and expectations for economic growth and inflation. Monetary policy can only influence short-term interest rates and, over the medium-term, actual and expected rates of inflation."
6. He got everything right except the last observation on being able to influence actual and expected rates of inflation. That is a myth. Central bank's do not influence almost anything in the list above.
7. A survey done in his own country and presented at the annual Brookings Papers on Economic Activity concluded that even firms did not form their inflation expectations based on central bank's inflation

target and monetary policy framework. That did not anchor their expectations as much as the visit of the executives to supermarkets did.

8. In that sense, firms behaved little differently from households. Central banks' inflation targeting does not influence the public—households or businesses.
9. Further, central banks' failure to raise the inflation rate in the last ten to twelve years (US, UK and Europe) and in the last three decades (Japan) are powerful proofs against Wheeler's claim with respect to the inflation rate. At the same time, they are powerless to influence economic growth too. So, the mitigation for the ill-effects and consequences of an inflation-targeting central bank is not to add economic growth as an objective but to hold them responsible for what they can actually control. That does not include inflation or economic growth. That is only credit growth—of both bank and non-bank varieties. They can control that through monetary and regulatory policies.

The hard truths

10. Inflation targeting began to rise as a mandate for central banks in the 1980s because of a series of events: The experience of high inflation in the 1970s; the need to bring down long-term interest rates as economic growth had stalled after the post-WWII boom had run its course; to constrain the power of elected representatives and to vest more powers with 'disinterested' (and, therefore, democratically unaccountable) elites and experts; and, finally, but most importantly, to restore the balance of power to capital away from labour.
11. Despite the acceptance of Milton Friedman's logic of monetarism (the assertion that variations in money supply have major influences on national output), the deployment of the Phillips curve was an acknowledgement of the influence of the labour market over inflation. But, it was only partial because a low unemployment rate did not mean an incipient rise in wages. Globalisation had seen to it that it did not happen because the pool of available labour had expanded. The money supply was and is relatively powerless to do so in the developed world in the face of job insecurity.
12. Of course, as Fed Reserve chairman Paul Volcker demonstrated, central banks can bring down the inflation rate successfully but at the cost of engineering a severe recession. They should be wary of encouraging risk-taking and stoking bubbles because they are loath to induce caution and deflate bubbles. That is unpopular. So, even in this limited realm, the effects are asymmetric because central banks are constrained in one direction.
13. Unfortunately, central bankers are unable to or unwilling to accept these hard truths and keep making more and more mistakes, weakening economies and dividing societies.
14. In the developing world, supply-side rigidities (and that includes both labour and capital productivity), food prices, fiscal profligacy and fiscal dominance of monetary policy are more influential than wage costs, which is the case with the developed world. However, it is important not to overstate the case of fiscal policy and fiscal dominance of monetary policy as influential factors. They are policy-driven, whereas the role of supply rigidities and food prices is more structural in nature.
15. Further, experience has shown that, in developing countries, it is relatively far easier for the central banks to push up the inflation rate than it is possible for them to lower it.
16. Therefore, in comparison to their counterparts in the developed world, they are more influential in pushing the inflation rate higher because the enabling conditions are prevalent in their countries than in developed countries. The tinder is there. It is easier to set off a blaze.
17. They share a similarity in their ability to lower the inflation rate but at a price. The difference is that the price they pay in terms of growth sacrifice is higher, given their relative states of economic development. In a limited way, India's experience with inflation control success in 2017 and in 2018 demonstrates that.
18. Therefore, the submission is that an inflation targeting regime is ill-suited for central banks in all countries—developed or developing—for different reasons. We know the reasons for its adoption and economics was only one of the factors and a minor one at that.
19. Even that minor economic logic must be questioned because all reasonable men and women can agree that no economic theory or policy framework is valid for all seasons and all places.

The Indian experiment

- 20.In India, the consideration of inflation-targeting was necessitated by six years of high inflation between 2008 and 2013 (both years included). As per IMF data, on average, CPI inflation rate in those years in India were 9.1%, 12.3%, 10.5%, 9.5% 10% and 9.4%, respectively. One should not ignore the role of (intellectual) fashion. I subscribed to the fashion too, then.
- 21.But, in truth, it is ill-suited for developing countries as it is for developed countries. It is not fair to hold central banks responsible for an outcome over which they have either little control or, at best, asymmetric influence. In developing countries, their striving for success to keep inflation rates at or below target comes with unacceptable economic costs, just as their striving to keep it at or slightly above target comes with unacceptably high costs for developed countries.
- 22.At the same time, this does not mean that their mandate should include economic growth for it is even less susceptible to their influence than the inflation rate. They should focus on the variable that they can control. That is credit growth, both from banking and from non-banking channels. The central bank controls external commercial borrowings too.
- 23.If central banks redefine their mandate as control of overheating rather than targeting a rate of inflation over which they have very little control, they will be helping the economy better. Overheating manifests in credit growth, in asset markets (financial and real), and in trade deficits even if does not manifest in the rate of inflation all the time. Focusing on overheating more broadly also helps in ensuring financial stability which an inflation targeting regime does not achieve.
- 24.Of course, it is important to bear in mind that changes to policy regimes should not be capricious and not be dictated by proximate experiences alone. Doubtless, they play a role in triggering a review. But we should be careful not to overweight it. Just as the high inflation rates of 2008 to 2013 played a role in India opting for an inflation targeting regime, recent anxieties about India's growth outlook near-term and medium-term should not be the principal motivations for a review of the inflation targeting regime. In other words, the alternative chosen should be seen to work both during low and high inflation regimes. India's multiple indicators approach that was in vogue from 1998 to 2016 offers itself as the choice.
- 25.It had served India well (see *Chart 1*). India comes off quite well even when evaluated against the low inflation performance of emerging and developing Asian nations. India's inflation rate significantly exceeded that of its reference group only since 2008. That is, of course, explained by a loose fiscal policy and a fiscally-dominated monetary policy.

In conclusion

- 26.The RBI should define overheating more broadly than only through inflation. Apart from the inflation rate, overheating manifests itself in trade deficit and in asset (financial and non-financial) price bubbles. Hence, managing credit growth through monetary policy and regulatory measures could not only rein in inflation but also other imbalances, of both real and financial variety. Thus, an 'overheating' mandate will also ensure financial stability.
- 27.Consequently, India should consider returning to its 'multiple indicators approach' that served the country well except for the period between 2008 and 2013 when monetary policy was fiscally dominated. If that is not favoured, India's central bank should target credit growth—through banking and non-banking channels.
- 28.The government, on its part, should work to remove structural supply rigidities both in the farm and in the non-farm economy. Principally, that involves removing the legal, regulatory and compliance burden and access to finance for small and medium enterprises, including working capital availability.

TOPIC 4. EASE OF DOING BUSINESS

1. The latest ease of doing business rankings for Indian states, released by Department for Promotion of Industry and Internal Trade (DPIIT), have thrown up some interesting results. The absence of more industrialised states such as Tamil Nadu and Maharashtra from top rungs and presence of states such as Uttar Pradesh (which was in the past far behind but has now shot up to all-India number 2) in the top ranks has surprised many. A look at what went into calculating the final rankings.

How are the rankings arrived at?

2. The objective of DPIIT's reform exercise is to provide a business-friendly environment, for which the regulations in a state have to be made simpler. Therefore, it devised a methodology to rank the states according to the ease of doing business (EoDB) in a state.
3. DPIIT provides a set of recommendations meant to reduce the time and effort spent by businesses on compliance with regulation called the Business Reform Action Plan (BRAP). BRAP 2019 is an 80-point list of reforms recommended to simplify, rationalise and digitise the regulatory framework in a state.
4. The reforms are grouped into 12 broad areas like land administration, labour regulation, obtaining electricity and water supply permits, environment regulation, etc. States are required to submit proof of implementing each reform on the DPIIT's EoDB portal and submit a list of users of these reforms. A sample of these users is then surveyed to determine the efficacy of these reforms. Each question is assigned a weight. The final score is a weighted average of all the responses applicable to a state.

What reforms does DPIIT recommend?

5. DPIIT recommends all states have a single-window system that provides all necessary information on permits and licences required for starting a business. Permissions required from municipal or village government bodies or police for activities like filming movies should also be explicitly mentioned.
6. To reduce delays further, DPIIT recommends that the duration of licences be extended or that they be renewed automatically based on self-certification or third-party verification. A state is also rewarded if a set of regulations (like labour or environment laws) are not applicable to it.

TABLE 1: EASE OF DOING BUSINESS RANKS, TOP 10 IN 2019

State	2015	2016	2017	2019
Andhra Pradesh	2	1	1	1
Uttar Pradesh	10	14	12	2
Telangana	13	1	2	3
Madhya Pradesh	5	5	7	4
Jharkhand	3	7	4	5
Chhattisgarh	4	4	6	6
Himachal	17	17	16	7
Rajasthan	6	8	9	8
West Bengal	11	15	10	9
Gujarat	1	3	5	10

Source: DPIIT

TABLE 2: REFORMS, APPLICABLE/IMPLEMENTED

State	Applicable	Implemented
Andhra	187	187
UP	186	184
Telangana	186	184
MP	187	187
Jharkhand	187	186
Chhattisgarh	187	186
Himachal	185	175
Rajasthan	186	183
W Bengal	187	187
Gujarat	187	187

Source: DPIIT

TABLE 3: SHARE (%) IN NEW INVESTMENTS ANNOUNCED

State	2017-18	2018-19
Andhra	6.56	16.29
Haryana	3.37	15.74
Tamil Nadu	4.01	9.32
Gujarat	6.76	7.74
Maharashtra	18.09	6.32
Karnataka	3.32	6.08
Rajasthan	2.01	3.04
MP	2.87	2.73
Odisha	8.25	2.43
NCT Delhi	1.38	1.76

Source: CMIE

Are these scores and ranks comparable to those from previous years?

7. For the first time since its inception in 2015, the BRAP rankings relied entirely on the feedback it received from the businesses for whom these reforms were intended. Earlier editions computed scores based on the responses of the relevant state government departments. The 2017-18 edition used a combination of state government and user feedback to compute the score.
8. Therefore, strictly speaking, the 2019 rankings are not comparable with those from last year.

How did the states perform?

9. Andhra Pradesh secured the top spot for the third time since the ranking was first released in 2015 (Table 1). UP jumped ten spots to number two and Telangana slipped to three. Gujarat, which was

first in the first-ever edition of the rankings, was ranked 11 this year; Haryana slipped all the way to 17.

Why were these rankings criticised?

- 10.DPIIT'S methodology does not consider the actual number of reforms implemented by the states, as shown in Table 2. States like Haryana and Gujarat have implemented all the reforms recommended by the DPIIT, but were ranked low on the EoDB list.
- 11.Gujarat has reportedly attributed this to poor response from the survey respondents. The methodology used by the DPIIT awards points on a reform to a state only if there was an adequate response from users of that response.
- 12.Ideally, the number of respondents for every state should be decided based on population or number of business clusters to ensure that the sample is representative of the state. It is not clear if DPIIT used representative samples.
- 13.Also, business owners' expectations from the governments can differ. A business owner from Tamil Nadu may assess their state government's IT portal differently from one in UP.

How do these reforms affect investments?

- 14.An analysis by CARE Ratings shows that "the top-ranking states in terms of ease of doing business have not necessarily been associated with higher shares of new investments announced during the year".
- 15.As Table 3 shows, except for Andhra Pradesh, the top-ranking states as per these rankings do not have high shares in the total investment during the year. This is because businesses respond to other conditions like the availability of skilled labour, infrastructure, finance, etc.
- 16.In addition, these rankings do not consider the cost of doing business, which is what matters to businesses at the end of the day.

TOPIC 5. EXPORT OF ONIONS

1. On Monday, a shaken central government issued a notification **prohibiting the export of onions** even as the average traded price of the bulb crossed the psychological barrier of Rs 30 per kg at Maharashtra's Lasalgaon wholesale market. This ban came just about three months after the [Narendra Modi](#)-led government tweaked the archaic Essential Commodities Act, 1955 to make the imposition of stock limit and movement restrictions on food grains, edible oilseeds, potatoes, onions and other essential commodities only applicable in extreme conditions like war or natural calamity. The export ban comes even as the central government works on making the ordinance a law.

2. A look at the export ban, and its possible repercussion in the days to come.

What were the triggers that led to the export ban?

3. There seem to be two main triggers that prompted the government to take the extreme step of putting a blanket ban on exports of all kinds of onions. The first was obviously the steady increase in wholesale prices of onions which has seen the kitchen staple becoming costlier in the urban markets. Between March and September, the average price of the bulb at Lasalgaon's market has appreciated by almost 100 per cent. Prices at the markets in Niphad taluka of Nashik district, which were in the range of Rs 1,500 per quintal in March, have since appreciated to Rs 3,000. At retail markets, onion is now trading between Rs 35-40 per kg as against the Rs 25-30 per kg in June.
4. The immediate trigger which led to the ban can also be found in the Consumer Price Index (CPI) numbers released by the Ministry of Statistics and Program Implementation (MoSPI) on Monday. The numbers, which measures the inflation was 6.69 per cent a tad bit lesser than the 6.73 of last month but well above the Reserve Bank of India (RBI)'s target of 6 per cent. The Consumer Food Price Index (CFPI) for August was 9.05 as against 9.27 of last month.
5. At the policy level, the high CFPI and the rising price of onion were enough triggers to get an export ban on onion at a time when farmers were offloading their stored onions.

Why are onions costlier in wholesale markets?

6. The answer to this question can be found in the exceptionally heavy rains which lashed the country in August. Those rains have led to a near-complete washout of the almost market-ready onion crop in Karnataka which was to hit the markets early in September. Along with this, the rains have also wreaked havoc on the stored onions in Madhya Pradesh, Gujarat and parts of Maharashtra. At present, it is only the onion growers in Maharashtra who have stored up the produce which they harvested in March-April. The supply disruption is likely to continue till the new crop in Maharashtra hits the markets early November.
7. If the domestic supply-demand situation was heavily tilted towards the latter, demand for Indian onion was also rising from international markets. Indian onions, normally shipped out countries in the Gulf, Sri Lanka and Bangladesh, have a year-round steady demand. However, demand from Sri Lanka, exporters say has suddenly picked up as the island nation also has reported heavy destruction of their crop due to rains. The landed cost of Indian onions at Dubai port at this moment is around Rs 32-35 per kg which has led many exporters to increase their shipments from Nashik.

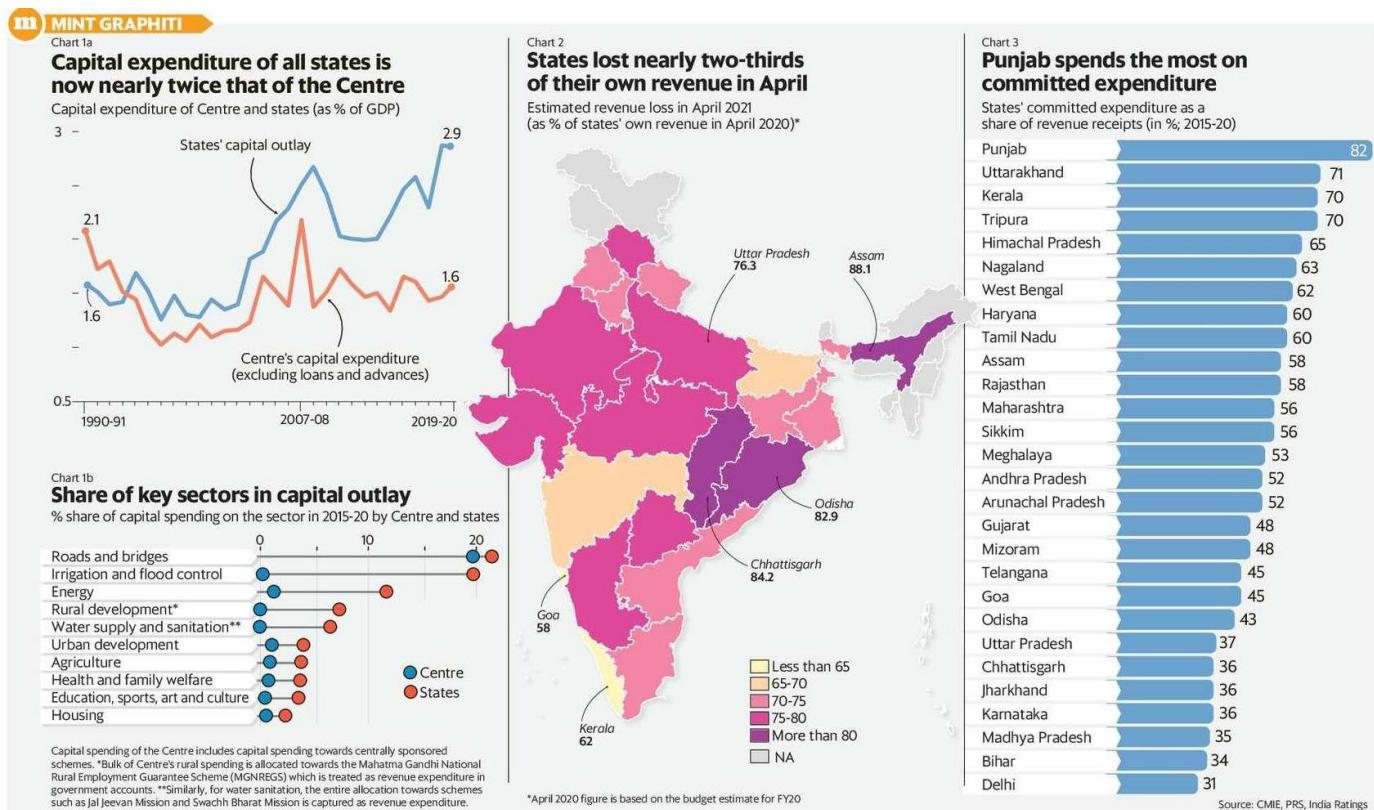
So will the export ban bring down onion prices?

8. Once the markets open for trade on Tuesday, a sharp depreciation in prices is expected to take place in view of the export ban. However, traders feel the prices are again going to rise in a week or so as the overall supplies will remain stressed. The new crop, they say, will arrive only post November and with the demand expected to rise before the Dussehra festive season starts, prices will continue to remain bullish.

Will the onion export ban have any political fallout?

9. The political fall out of high onion prices can hardly be overemphasized. With Bihar election likely to be held later this year, the government it seems was wary of going to the electorate when the kitchen staple was costlier than usual.
10. Ironically the export ban comes when the government plans to make the ordinances that amended the Essential Commodities Act into law and stop knee-jerk reactions like the imposition of stock limits. Farmers' organisations were quick to call out the "double standard" on part of the government. From Tuesday, Shetkari Sangtana, the farmer's union started by legendary farmer's leader Sharad Joshi, has started protests against this move.

TOPIC 6. CAPITAL EXPENDITURE



1. The tussle between the Centre and the states over the goods and service tax (GST) imperils not just state finances but also the prospects of a rapid economic recovery. State governments have been the leading driver of investments over the past few years. With GST compensation on hold, and their own tax revenues under a cloud, states are likely to cut back sharply on capex this year, hurting growth.
2. As a share of India's gross domestic product (GDP), states' combined capex was 2.9% in 2019-20, nearly twice that of the Centre (1.6%). This means that about two-thirds of the total public capex in the economy came from the states (**see charts 1a and 1b**).
3. With massive contractions in states' tax collections, they will be staring at huge shortfalls in revenues. The limited resources of states are likely to be augmented by higher borrowing but will still not be enough to cover all budgeted expenses. Most of the funds are likely to flow towards current expenditure. State capex will be hit hard (**see chart 2**).
4. "Post the crisis, the states are simply not in a position to incur capital expenditure," said Indira Rajaraman, economist and member of the 13th Finance Commission.
5. In fact, many states have already postponed tendering for new infrastructure projects, while several ongoing projects are facing delays. Data from the Centre for Monitoring Indian Economy's (CMIE's) capex-tracker shows that new projects by state governments fell sharply in the June quarter, contributing to the collapse in overall capex numbers.
6. The drop in state capex will derail the investment cycle completely, and make it extremely difficult to get the economy back on track quickly. Slower economic recovery will mean slower rise in tax revenues. This will, in turn, worsen debt metrics, and put public finances under greater strain in the years to come.
7. The Centre has allowed some headroom to states to borrow more—0.5% of the gross domestic product unconditionally and an additional 2% if they meet certain performance goals. But states which already face precarious debt positions may not want to take on added debt. They will opt to trim their discretionary spending (**see chart 3**).
8. To be sure, the additional borrowing on account of shortfall in GST compensation will not be treated as states' liability. If the states choose to borrow the entire shortfall of ₹2.35 trillion, which includes

the revenue lost from GST implementation and the pandemic-induced lockdown, the principal will be paid back to states from future sin taxes.

9. States will, however, have to pay the interest. Or states could collectively borrow ₹97,000 crore, the revenue shortfall from GST implementation according to the Centre, and the Centre will pay both the principal and interest.

10. However, the Centre has not specified what happens if the cess collections again fall short of requirement next year.

11. "There can easily be a shortfall of around ₹2 trillion next year also", said A. Prasanna of ICICI Securities Primary Dealership. "They will again extend the cess but next year, someone will have to pay the interest".

12. This is the time when states need a stability in the flow of funds to be able to plan their expenditure, said Lekha Chakraborty, professor at National Institute of Public Finance and Policy. "Now, states are also exposed directly to macro-economic uncertainty, not just the Centre," said Chakraborty.

13. For the economy to revive, public investment will have to fill up a larger gap in aggregate demand than it does now, but if state finances continue to remain stretched, public capex is unlikely to recover.

14. "The Centre has taken the initiative to drive infrastructure investments but it remains to be seen if they can fully compensate for the states' capex contribution," said Rajaraman.

TOPIC 7. RBI EXPERT PANEL

1. A five-member expert committee headed by K V Kamath, former Chairman of ICICI Bank, recently came out with recommendations on the financial parameters required for a one-time loan restructuring window for corporate borrowers under stress due to the pandemic. It sets the stage for the banking sector's biggest ever loan restructuring programme.

Why was the committee set up?

2. The Reserve Bank of India set it up last month. While the RBI provided the broad contours of the one-time loan restructuring plan, the committee was tasked to recommend the sector-specific benchmark ranges for financial parameters to be factored into each resolution plan for borrowers with an aggregate exposure of Rs 1,500 crore or above at the time of invocation. The process and conditions are being announced to ensure there is no evergreening of bad loans, and only genuine cases directly hit by Covid-19 stress are provided the facility of one-time restructuring. The programme is being implemented as a six-month moratorium on repayments ended on August 31 and the economy faced contraction amid a continuing lockdown in several states.

How serious is the debt problem?

3. The Kamath committee noted that corporate sector debt worth Rs 15.52 lakh crore has come under stress after Covid-19 hit India, while another Rs 22.20 lakh crore was already under stress before the pandemic. This effectively means Rs 37.72 crore (72% of the banking sector debt to industry) remains under stress. This is almost 37% of the total non-food bank credit. The Kamath panel has said companies in sectors such as retail trade, wholesale trade, roads and textiles are facing stress. Sectors that have been under stress pre-Covid include NBFCs, power, steel, real estate and construction.

What are the key proposals?

4. The RBI has broadly accepted the committee's recommendation to take into account five financial ratios and sector-specific thresholds for each ratio in respect of 26 sectors while finalising the resolution plans. These ratios are: total outside liabilities to adjusted tangible net worth; total debt to earnings before interest, taxes, depreciation, and amortisation (EBIDTA); debt service coverage ratio (DSCR); current ratio; and average debt service coverage ratio (ADSCR).
5. The RBI has now finalised sector-specific ceilings for each of these ratios that should be considered by lending institutions. The parameters have been specified depending on severity of the impact of the pandemic. The hardest-hit sector real estate, for instance, has been provided the highest permissible debt-to-EBIDTA ratio for a resolution plan.

How will these proposals be implemented?

6. Banks will present their board-approved resolution policies taking into account the RBI final guidelines. Broad guidelines will also be put in place for restructuring of retail loans. The RBI has allowed banks to recast loans which were classified as standard as on March 1, 2020. For implementing resolution plans, signing of an inter-creditor agreement (ICA) is mandatory in all cases involving multiple lending institutions.
7. The resolution framework will be invoked before December 31, 2020 and will be implemented before 180 days from the date of invocation. The process has to be approved by lenders with 75% in value and 60% in numbers. Lenders signing ICA will have to make a 10% provision and non-signing lenders at 20%. Restructuring can be done via the extension of residual tenor by a maximum of two years with or without moratorium and may include conversion of loan into equity. Any default by the borrower with any of the lenders that signed an ICA during the monitoring period would trigger a review period of 30 days. If the borrower remains in default at the end of the period, all lenders would downgrade the account as a non-performing asset (NPA).

Which are the sectors affected?

8. Pharma, telecom, IT, FMCG, brokerage services, agri and food processing, sugar and fertiliser are among the sectors least impacted by the pandemic. Tourism, hotels, restaurants, construction, real estate, aviation, shipping, media and entertainment are among the sectors most impacted. Of the Rs 15.5 lakh crore loans impacted by the pandemic, the biggest ones are retail trade and wholesale trade

as banks loan worth Rs 5.42 lakh crore have been impacted. Loans worth Rs 1.94 lakh crore to the roads sector and Rs 1.89 lakh crore to the textile sector have also been impacted.

9. Other major industries impacted, and to which banks have sizeable exposure, include engineering (Rs 1.18 lakh crore), petroleum & coal production (Rs 73,000 crore), ports (Rs 64,000 crore), cements (Rs 57,000 crore), chemicals (Rs 54,000 crore) and hotels & restaurants (Rs 46,000 crore) among others.
10. Small borrowers: Banks are working out individual plans for retail borrowers and small units; the conditions for big borrowers do not apply to them. At least Rs 210,000 crore (1.9% of banking credit) of the non-corporate loans are likely to undergo restructuring, which would have otherwise slipped into NPAs, India Ratings has said in a report.

Will the loan recast lift the economy?

11. Restructuring announcements in the past (FY08-11 and FY13-19) had raised concerns about the efficacy of the restructuring mechanism, as most of the restructured assets eventually slipped into NPAs. While the RBI has put into place several guardrails this time in the form of defined timelines and external vetting, success of the plan will still largely depend upon a significant revival in the economy. The GDP, which contracted by 23.9% in the April-June quarter, is likely to continue contracting in the ongoing quarter.
12. According to India Ratings, based on an account level analysis, nearly 53% of this pool is at a high probability of restructuring/slippages. The balance 47% is at moderate risk of restructuring, and progress on these accounts will depend on the progress of Covid-19 situation. The biggest impact will be that banks will be able to check the rise in NPAs to a great extent. However, it's not going to bring down the NPAs from present levels as legacy bad loans of close to Rs 9 lakh crore will remain within the system.

How were earlier schemes misused by banks and corporates?

13. The RBI discontinued the corporate debt restructuring (CDR) scheme from April 1, 2015. For years, promoters of many big corporates were siphoning off bank funds while their units suffered. They approached CDR cells of banks to get their loans recast, some of them managing this more than once. Some of those who misused CDR are now in the bankruptcy court. The RBI later introduced three more loan recast schemes which either remained largely on paper or were abused by borrowers. The Insolvency and Bankruptcy Code finally kicked off and the RBI announced a stringent loan resolution process.

TOPIC 8. FOREIGN FUNDS

The story so far:

1. Licences of 13 NGOs have been suspended under Foreign Contribution (Regulation) Act (FCRA), 2010, this year. Their FCRA certificates were suspended and bank accounts frozen. Ministry of Home Affairs (MHA) said it had received “serious adverse inputs” regarding working of several NGOs which come under ambit of FCRA in tribal areas. The licences of at least two NGOs working in Jharkhand have been suspended.

What is the FCRA?

2. FCRA regulates foreign donations and ensures that such contributions do not adversely affect internal security. First enacted in 1976, it was amended in 2010 when a slew of new measures were adopted to regulate foreign donations. FCRA is applicable to all associations, groups and NGOs which intend to receive foreign donations. It is mandatory for all such NGOs to register themselves under FCRA. Registration is initially valid for 5 years and it can be renewed subsequently if they comply with all norms. Registered associations can receive foreign contribution for social, educational, religious, economic and cultural purposes. Filing of annual returns, on lines of Income Tax, is compulsory. In 2015, MHA notified new rules, which required NGOs to give an undertaking that acceptance of foreign funds is not likely to prejudicially affect sovereignty and integrity of India or impact friendly relations with any foreign state and does not disrupt communal harmony. It also said all such NGOs would have to operate accounts in either nationalised or private banks which have core banking facilities to allow security agencies access on a real time basis.

Who cannot receive foreign donations?

3. Members of legislature and political parties, government officials, judges and media persons are prohibited from receiving any foreign contribution. However, in 2017 MHA, through the Finance Bill route, amended 1976-repealed FCRA law paving way for political parties to receive funds from Indian subsidiary of a foreign company or a foreign company in which an Indian holds 50% or more shares.
4. The amendment, according to legal experts, followed accusations that the Bharatiya Janata Party and the Congress had been receiving foreign funds for political activities from the U.K.-based Vedanta Group from 2004 to 2012. The Association for Democratic Reforms (ADR), a public advocacy group, had filed a public interest litigation petition at the Delhi High Court in 2013 against both parties for violating FCRA norms by accepting foreign funds. Both parties challenged a High Court order, which had termed the donations illegal in 2014, and moved the Supreme Court. They withdrew the petitions after the FCRA was amended retrospectively.

How else can one receive foreign funding?

5. The other way to receive foreign contributions is by applying for prior permission. It is granted for receipt of a specific amount from a specific donor for carrying out specific activities or projects. But the association should be registered under statutes such as the Societies Registration Act, 1860, the Indian Trusts Act, 1882, or Section 25 of the Companies Act, 1956. A letter of commitment from the foreign donor specifying the amount and purpose is also required. In 2017, the MHA suspended the FCRA of the Public Health Foundation of India (PHFI), one of India’s largest public health advocacy groups, on grounds of using “foreign funds” to lobby with parliamentarians on tobacco control activities. After several representations by the PHFI to the government, it was placed in the ‘prior permission’ category.

When is a registration suspended or cancelled?

6. The MHA on inspection of accounts and on receiving any adverse input against the functioning of an association can suspend the FCRA registration initially for 180 days. Until a decision is taken, the association cannot receive any fresh donation and cannot utilise more than 25% of the amount available in the designated bank account without permission of the MHA. The MHA can cancel the registration of an organisation which will not be eligible for registration or grant of ‘prior permission’ for three years from the date of cancellation.

Have there been suspensions in the past?

7. According to MHA data, since 2011, the registration of 20,664 associations was cancelled for violations such as misutilisation of foreign contribution, non-submission of mandatory annual returns and diversion of foreign funds for other purposes. As on September 11, there are 49,843 FCRA-registered associations.

What about international donors?

8. The government has also cracked down on foreign donors such as the U.S.-based Compassion International, Ford Foundation, World Movement for Democracy, Open Society Foundations and the National Endowment for Democracy. The donors have been placed on a ‘watch list’ or in the ‘prior permission’ category, barring them from sending money to associations without MHA’s clearance.

TOPIC 9. LABOUR CODES

1. Lok Sabha Tuesday cleared new versions of **3 labour codes** — Industrial Relations Code Bill, 2020, Code on Social Security Bill, 2020 and Occupational Safety, Health and Working Conditions Code Bill, 2020.
2. While the government proposes to increase the ambit of social security by including gig workers and inter-state migrant workers, it has also proposed measures that will provide greater flexibility to employers to hire and fire workers without government permission.

What are the key proposals?

3. In Industrial Relations Code Bill, 2020, government has proposed to introduce more conditions restricting rights of workers to strike, alongside an increase in threshold relating to layoffs and retrenchment in industrial establishments having 300 workers from 100 workers or more at present — steps that are likely to provide more flexibility to employers for hiring and firing workers without government permission.
4. The Industrial Relations Code has raised the threshold for requirement of a standing order — rules of conduct for workmen employed in industrial establishments — to over 300 workers. This implies industrial establishments with up to 300 workers will not be required to furnish a standing order, a move which experts say would enable companies to introduce arbitrary service conditions for workers.
5. The Standing Committee on Labour, in its report submitted in April, had also suggested hiking the threshold to 300 workers, noting that some state governments like Rajasthan had already increased the threshold and which, according to the Labour Ministry, has resulted in “an increase in employment and decrease in retrenchment”. “The Committee desires that the threshold be increased accordingly in the Code itself and the words “as may be notified by the Appropriate Government” be removed because reform of labour laws through the executive route is undesirable and should be avoided to the extent possible,” it had said.
6. The Industrial Relations Code states that the provision for standing order will be applicable for “every industrial establishment wherein three hundred or more than three hundred workers, are employed, or were employed on any day of the preceding twelve months”.

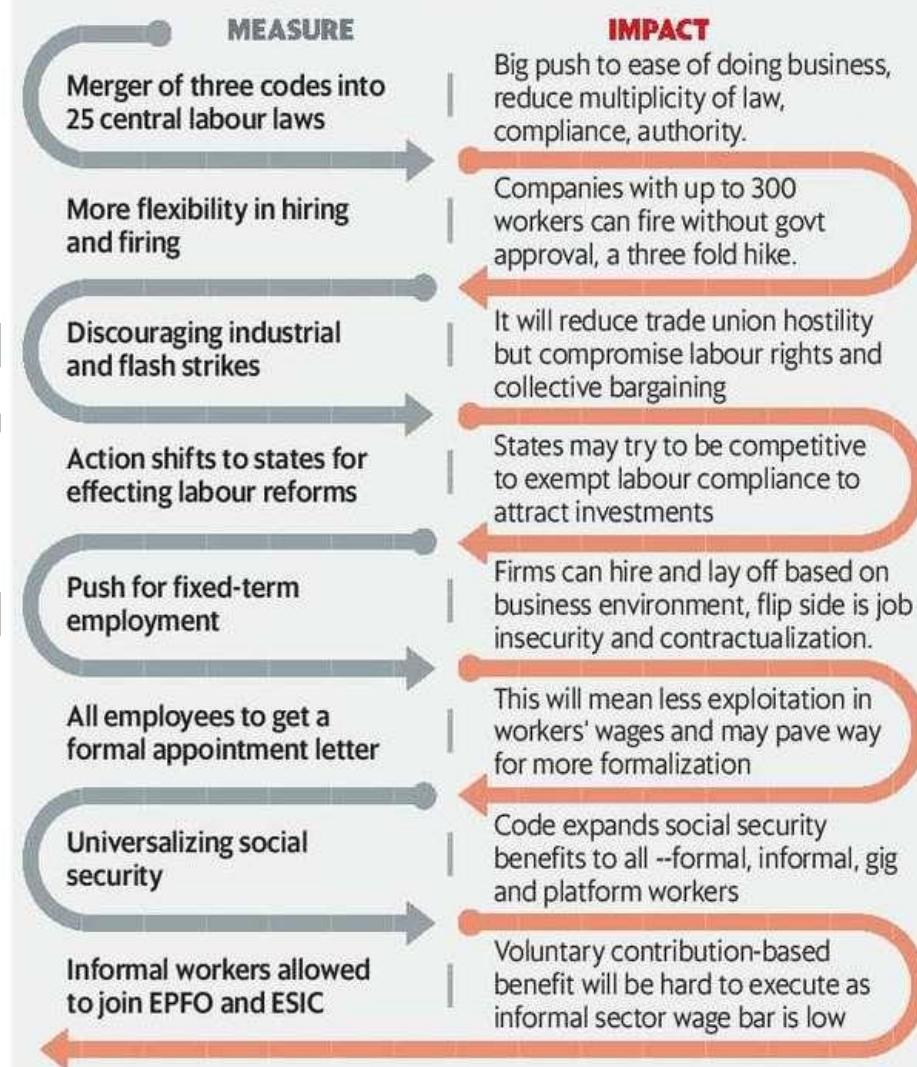
What are the concerns raised over the new labour codes?

7. Analysts say the increase in the threshold for standing orders will water down the labour rights for workers in small establishments having less than 300 workers. “The increase in the threshold for standing orders from the existing 100 to 300 is uncalled for and shows the government is very keen to give tremendous amounts of flexibility to the employers in terms of hiring and firing...dismissal for alleged misconduct and retrenchment for economic reasons will be completely possible for all the industrial establishments employing less than 300 workers. This is complete demolition of employment security,” XLRI professor and labour economist KR Shyam Sundar said.
8. The Industrial Relations Code also introduces new conditions for carrying out a legal strike. The time period for arbitration proceedings has been included in the conditions for workers before going on a legal strike as against only the time for conciliation at present.
9. For instance, the IR Code proposes that no person employed in an industrial establishment shall go on strike without a 60-day notice and during the pendency of proceedings before a Tribunal or a National Industrial Tribunal and sixty days after the conclusion of such proceedings. Thus, elongating the legally permissible time frame before the workers can go on a legal strike, making a legal strike well-nigh impossible.
10. The IR code has expanded to cover all industrial establishments for the required notice period and other conditions for a legal strike. The Standing Committee on Labour had recommended against the expansion of the required notice period for strike beyond the public utility services like water, electricity, natural gas, telephone and other essential services.
11. At present, a person employed in a public utility service cannot go on strike unless he gives notice for a strike within six weeks before going on strike or within fourteen days of giving such notice, which the IR Code now proposes to apply for all the industrial establishments.

What are the other proposals for workers?

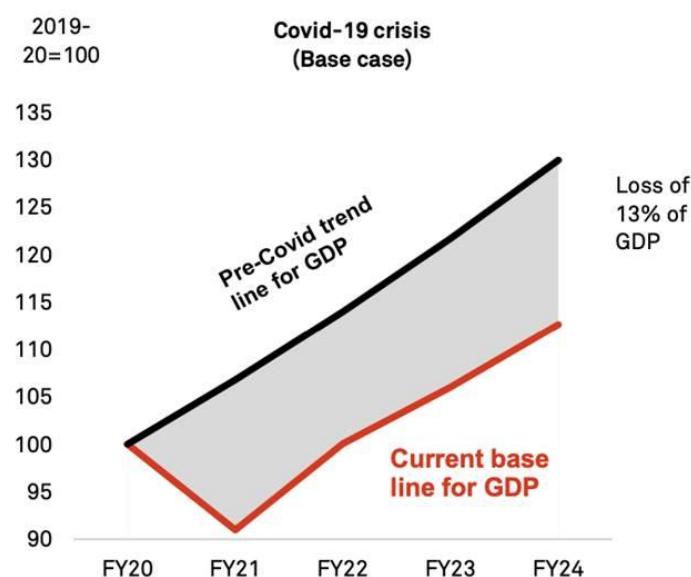
12. The IR Code Bill has also proposed a worker re-skilling fund, though the contributions for the fund are only detailed from the employer of an industrial establishment amounting to fifteen days wages last drawn by the worker immediately before the retrenchment along with the contribution from such other sources. The mention of 'other sources' for funding the re-skilling fund, experts said, is vague.
13. The other two codes have also proposed changes for expanding social security and inclusion of inter-state migrant workers in the definition of workers. The Social Security Code proposes a National Social Security Board which shall recommend to the central government for formulating suitable schemes for different sections of unorganised workers, gig workers and platform workers. Also, aggregators employing gig workers will have to contribute 1-2 per cent of their annual turnover for social security, with the total contribution not exceeding 5 per cent of the amount payable by the aggregator to gig and platform workers.
14. The Occupational Safety, Health and Working Conditions Code has defined inter-state migrant workers as the worker who has come on his own from one state and obtained employment in another state, earning up to Rs 18,000 a month. The proposed definition makes a distinction from the present definition of only contractual employment.
15. The Code, however, has dropped the earlier provision for temporary accommodation for workers near the worksites. It has though proposed a journey allowance — a lump sum amount of fare to be paid by the employer for to and fro journey of the worker to his/her native place from the place of his/her employment.

Decoding the labour code



TOPIC 10. UNEMPLOYMENT

1. This week started with several economists coming out with their revised GDP growth expectations for India in response to the official GDP growth data that was released on August 31. With the economy shrinking more than what most analysts expected, the revisions — be it India Ratings and Research, Goldman Sachs, ICRA or Crisil — were all in the negative direction.
2. For instance, Crisil in its September update (over the May assessment) stated the following two main reasons: “With the pandemic’s peak not yet in sight and the government not providing adequate direct fiscal support, the downside risks to our earlier forecast have materialised”.
3. In other words, in May, the two things Crisil analysts feared may go wrong have gone wrong.
4. One, Covid continues to spread unabated. Look at the three India maps (Source: Crisil) with the number of districts reporting more than 1,000 cases. See how rapidly the whole country is now getting afflicted. As of the latest data, India is adding close to 1 lakh cases every single day.
5. Two, in May, Crisil had expected that the government would spend an additional 1% of GDP over and above the 1.2% of GDP that was announced in the immediate aftermath of the lockdown. But this hasn’t happened.
6. As a result, Crisil estimates that India will suffer a “permanent” loss of 13% of real GDP over the medium term. This is much higher than the 3% average loss that most other economies in Asia-Pacific will suffer.
7. Permanent loss implies that the economy will not be able to recover this GDP value. A simple way to understand permanent loss to the GDP is to consider the loss to the economy due to the summer vacations that could not be taken this year or the three haircuts that were subsumed in the fourth one.
8. In everyday cash terms, this loss is going to be around Rs 30 lakh crore. Simply put, this period of economic disruption will rob India of Rs 30 lakh crore. To put this in perspective, the government has put much less than Rs 3 lakh crore through the Atmanirbhar Bharat Abhiyan package in the economy.
9. This sharp economic contraction will show up in massive unemployment and disguised employment. In this regard, I would highly recommend watching Mahesh Vyas, the CEO of Centre for Monitoring Indian Economy (CMIE), during **The Indian Express Explained event** detailing the state of unemployment in the country.
10. Vyas explained how grave an employment challenge India faces. There is an existing pool of over 35 million (or 3.5 crore) unemployed people in India. Since the pandemic hit, as many as 21 million salaried jobs have been lost and these are not likely to be recovered in a hurry.



Source: NSO, CRISIL estimates

11. But the already unemployed number does not take into account the millions who have “joined” the farm sector as the jobs dried up in the rest of the economy. While counted as employed, these millions are more accurately characterised as disguised unemployment.
12. To this pool of 35 million, India adds 2 million people of the working age group — that is, 15 years to 59 years — each month. But since we have a labour force participation rate (LFPR) of just 40%, only about 0.8 million seek employment each month.
13. The LFPR is the proportion of people in a population who are seeking work. It is calculated by adding the employed and the unemployed and showing them as a proportion of the total population. According to Vyas, at around 40%, India has a considerably low LFPR as compared to over 60% in developed countries.
14. But even at an undesirably low LFPR, in a year, India needs to create around 9.6 million (or roughly 1 crore) new jobs. So by the end of this financial year, without any further jobs being lost, India would need close to 4.5 crore jobs.
15. Now CMIE’s data shows between 2016-17 and 2019-20 the total number of employed people in the country stayed stagnant — from 40.7 crore to 40.3 crore.
16. Thus, it is unlikely that over the next few years — when either the GDP will contract or grow at a slow pace — jobs creation will happen at a fast pace.
17. And yet with each year, at least 1 crore young Indians will join the labour force demanding work.
18. Seen from this context, one can better appreciate the other news stories on the Indian economy this week.
19. For one, with more and more labourers joining back the farm sector, the issue of Minimum Support Prices — that are announced by the government — will increasingly come in sharp focus. Indian farming was never remunerative and is likely to be even less now with more people dependent on it.
20. As the protest in Haryana and Punjab perhaps signal, farmers will increasingly want more support from the government even as the government, which is facing a massive financial crunch, tries to whittle down its payouts to the farm sector.
21. In the non-farm sector, too, the Central government’s preference to push growth by providing more loans through the banks — instead of spending the money directly as most economists suggest — is the main reason why Finance Minister Nirmala Sitharaman said even private sector banks will have to contribute towards the implementation of government schemes.
22. This is quite a remarkable shift in the stance of the Narendra Modi led government — from PM Modi criticising “phone banking” in public sector banks to asking even the private banks to push government schemes.
23. Anyway, stay safe because that is India’s best chance of staging an economic recovery.

TOPIC 11. EPFO EARNINGS

The story so far:

1. In March, the Central Board of Trustees (CBT) of the Employees' Provident Fund Organisation (EPFO) had recommended an 8.5% interest payout to members for FY20. At a meeting earlier this month, the CBT reiterated its recommendation, after a review, to the Centre. The payout would comprise 8.15% interest based on income from debt instruments and the balance 0.35% would be credited from the sale of a part of its investments in exchange traded funds (capital gains), subject to their redemption by December 31. The CBT also recommended that such capital gains be accounted for as income on an exceptional basis for 2019-20.

Where does the EPFO invest to generate returns?

2. The EPFO uses its corpus (estimated at ₹13 lakh crore-₹14 lakh crore in the last fiscal) to earn income from investments in debt instruments and equities. Investment in equities is capped at 15%. The remaining funds are invested in debt. The debt component helps the EPFO earn fairly predictable returns, while the equity component has risks associated with fluctuations in the stock market. Based on the EPFO's earnings for the year, the CBT recommends in March an interest rate at which the payouts can be made. The final decision is notified by the Ministry of Labour.

What changed this time around?

3. At the CBT meeting in early March, the earnings for 2019-20 were discussed. Debt component expectations were more or less fixed and were in the range of ₹58,000 crore-₹59,000 crore. The ETF disinvestment process was expected to result in estimated capital gains of ₹3,000 crore. The interest rate recommendation, of 8.5%, was arrived at based on the estimated earnings. Typically, ETF dilution would have begun thereafter. But by the middle of March this year, equity markets were in free fall as the COVID-19 pandemic triggered a global selloff. It became clear that the anticipated earnings from ETF dilution could not be realised at the time. At a meeting of the CBT's Finance, Investment and Audit Committee (FIAC), which took place later in March, it was decided that the equity dilution would be put on hold until the stock markets recovered. With the recent improvement in market conditions, the FIAC met again, followed by a meeting of the CBT. It was clear that the debt component had earned ₹58,000 crore. What remained was the equity component.

4. The CBT recommended that the debt component, or the returns that were already in hand, would facilitate a payout at 8.15%. The earnings from ETF dilution were projected at ₹2,700 crore. So, the CBT decided to retain its recommendation of 8.5%, of which 0.35 percentage points would be realised based on the sale of equity. This sale could happen any time now, depending on how the market performs, but within December 31. Once the dilution takes place and it becomes clear that returns were indeed as anticipated, the CBT would convey the same to the Labour Ministry, and from thereon to the Finance Ministry. On approval, the interest rate would then be notified.

Will EPFO make the payouts in two instalments?

5. No. For now, there is no decision to make payment in two instalments, according to a member of CBT. Whenever ETF dilution takes place, within this calendar year, interest payout is set to happen in one shot.

Can the situation change?

6. It could, but seems unlikely as of now. For example, if stock market collapses again, and if ETF dilution does not bring in the expected returns, the 0.35% part of the interest rate may get reduced. However, the CBT member said currently there is nothing the Board foresees that could endanger the returns.

TOPIC 12. WOMEN IN ARMED FORCES

1. Indian Navy on Monday announced **selection of two women officers** as Observers in helicopter stream, making them first women airborne combatants who would be operating from warships. In another significant development in March, Supreme Court had upheld that women Short Service Commission officers in Navy were eligible for Permanent Commission. Navy had also inducted the first woman pilot in December last year. A look at what these developments mean for women in the Navy, how the situation has evolved and the road ahead.

Women in Indian Navy

2. Prior to 1992, women officers were inducted in Navy only in medical stream from Armed Forces Medical Service. From July 1992, Navy started inducting women, initially through a special entry scheme and later through Short Service Commission, in only select branches of Navy. Over years, various branches were added to list, and currently women officers can join Navy in streams of Air Traffic Control, Observers, Law, Logistics, Education, Naval Architecture, Pilots in Maritime Reconnaissance Stream only and Naval Armament Inspectorate. It needs to be noted like in the Army and the Air Force, women are currently only inducted as Commissioned Officers and not in Other Ranks which are of categories of Junior Commissioned Officers and Non-Commissioned Officers. In the early 2000s women officers from the Medical and Logistics stream were deployed on board Naval ships. While these deployments went on only for four-five years, they were discontinued for various reasons.

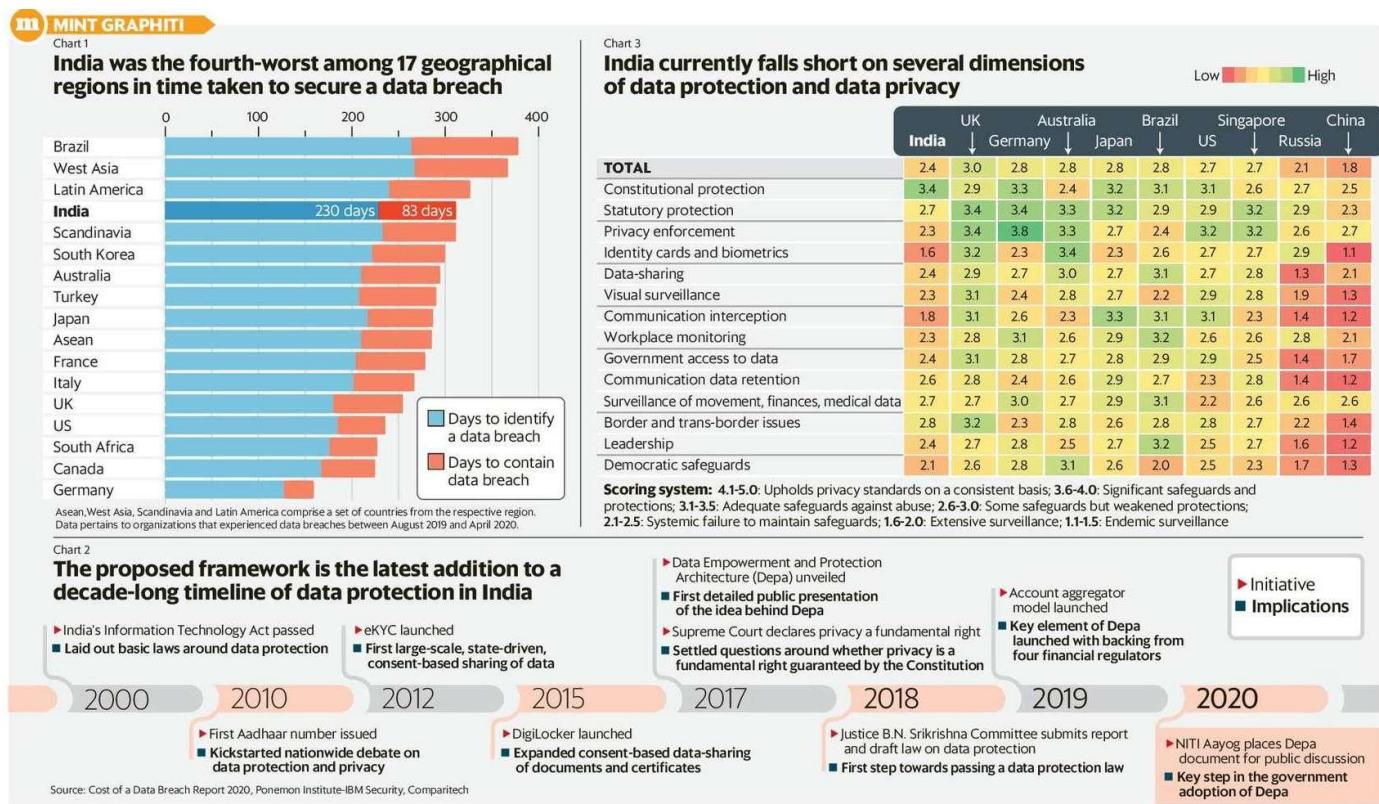
Women officers in new streams

3. Last December, the Navy announced the induction of a woman officer as pilot of Dornier aircraft, which are fixed wing aircraft operating from ashore establishments. On Monday, the Navy announced induction of two women officers as observers for the helicopter stream. Observers are airborne tacticians who fly on board helicopters or fixed-wing aircraft operated by the Navy. Till now women were inducted as observers for fixed wing aircraft which take off and land ashore. Entry in the helicopter stream means that women officers can now be deployed on frontline warships from which helicopters can operate.
4. In terms of various challenges towards deployment of women onboard warships, logistics part is not as challenging as one would imagine, especially as most of large warships of Navy do have basic living arrangements that can be allocated for women. Question of mindset and gender sensitization, on other hand, is something many believe would require concerted efforts, and concrete steps are being taken in that direction.
5. Serving and retired women officers from Armed forces in general and Navy in particular, sound a precautionary note against the celebrations about latest developments. They believe that the developments will have to actually result in more women coming into operational streams and new streams being opened for women in coming days. Some are also concerned that too much media and public attention on these new entrants can put unwanted pressure on them.
6. While women officers appreciate the support of many male military leaders in these processes, they also highlight the resistance from the system as a whole.

Permanent Commission and the road ahead

7. In yet another milestone for women in the Navy, the Supreme Court in March this year upheld the right of serving women officers from the Short Service Commission in the Navy to be eligible for the getting permanent commission (PC). Short service Commission tenures in the Armed forces are of 10 years, extendable by four years after which officers can be eligible for permanent commission.
8. In the said ruling in the matter of case Union of India & Others Vs Annie Nagaraja & Others, Apex Court bench of Justices DY Chandrachud and Ajay Rastogi have said, "The battle for gender equality is about confronting the battles of the mind. History is replete with examples where women have been denied their just entitlements under law and the right to fair and equal treatment in the workplace."
9. In the context of the Armed Forces, specious reasons have been advanced by decision makers and administrators. They range from physiology, motherhood and physical attributes to the male dominated hierarchies. A hundred and one excuses are no answer to the constitutional entitlement to dignity, which attaches to every individual irrespective of gender, to fair and equal conditions of work and to a level playing field. A level playing field ensures that women have the opportunity to overcome their histories of discrimination with the surest of responses based on their competence, ability and performance."
10. Women officers hope that these developments would result in them being posted at commanding positions on the ships which are a key for career advancements in the operational streams and also some day lead to women being deployed for most challenging of the deployments including that in the submarines.

TOPIC 13. DATA PROTECTION



- Indians are consuming more data today than ever before. In doing so, they are also generating and sharing more data about themselves than ever before. Who they are, how much they earn, where they spend, among others. This data can predominantly benefit corporations. It can also help individuals with a better deal on, say, loans and insurance.
- With the latter in mind, NITI Aayog, the government think-tank, last month released a discussion paper on a new data-sharing framework. The Data Empowerment and Protection Architecture (Depa) seeks to accelerate financial inclusion by advocating sharing of data by users for their good, on their terms. Even if initially adopted for financial services, Depa has the potential to be adapted to more domains.
- Depa challenges many current ways of thinking about data sharing and data protection globally. At one extreme is the European philosophy, which is geared towards protecting user data, often at the cost of business innovations. Depa says this approach would be counterproductive for India, a developing country. A system should enable, say, a street vendor to share data for a cheaper loan.
- At the other end is the American way, which is geared towards tech businesses, and innovations, but raises questions on whether they have too much power and if they will use it responsibly. Depa seeks to address this by defining who has access to data and by making user consent the key.
- Depa proposes a new set of entities to manage user consent called account aggregators. They will act as intermediaries between information providers (say, banks) and information users (say, robot advisers). While account aggregators will manage the flow of user data, they won't have access to it. Depa, however, doesn't cover data misuse by the giver (here, banks) or receiver (here, robot advisers).
- Across the world, there's a trade-off between efficiency and innovation, and the risk of misuse, security, and privacy violations. Take a mobile app that rewards you for paying credit card bills. It takes your consent to scan your email and fetch your outstanding bill. But what if it starts compiling your individual transactions, and selling that information to others?
- What if such data get stolen in a data breach? In 2019, in the US, an advanced tech market, there were 1,473 instances of data breaches, according to the Identity Theft Resource Centre, a US non-profit. These exposed about 164 million sensitive records and 705 million non-sensitive records.

8. The urgency to get it right is greater for India as it doesn't fare well in controlling data breaches. A 2020 study of 17 geographies by Ponemon Institute for IBM Security shows India to be the fourth-worst in time taken to identify and contain a data breach (*see chart 1*).
9. In most countries, data sharing has driven economic growth and innovation—from super apps in China to banks in the US, to fintech companies in Africa. Rather than let the private sector drive technology, some governments have sought to impose standards, even cooperation, through regulations and frameworks. For example, the EU passed its Payment Services Directive (PSD2) to harmonize payments regulations across EU countries, giving customers more control over their data.
10. How each country approaches data protection differs based on its needs and dominant world view. In India, while the Information Technology Act 2000 offered some data protection, the government's own experience in digital technology over the last decade forged this framework. It started with Aadhaar in 2010. Then came eKYC in 2012, a way to digitally share data from the Aadhaar database that allowed banks and telecom companies to onboard customers faster, but raised questions on data security and protection (*see chart 2*).
11. Even when data protection frameworks look alike, how well they work depends on the technical, legal and institutional capacities of different countries. In India, the lack of digital literacy has enabled scams. Comparitech, a UK-based pro-consumer website, examined data protection laws and institutions of several countries. Most countries fell short of acceptable standards. India's overall score showed a "systemic failure to maintain safeguards" (*see chart 3*).
12. How well technology works depends on the broader ecosystem. In that, India has a long way to go.

TOPIC 14. LADAKH



How dangerous is the situation given the People's Liberation Army numbers, firepower, and the area they are occupying?

1. The **People's Liberation Army** has deployed over two regular divisions (about 40,000 troops) along with supporting arms, logistic services and air force along the Eastern Ladakh frontline and as back-up. India too, has about two regular Army divisions supported by the Indian Air Force in this sector now.
2. Along the **Line of Actual Control (LAC)**, the PLA has now occupied many areas which were earlier considered 'disputed', that is, lying between Chinese and Indian perceptions of the LAC.
3. On Finger 4, north of **Pangong Tso**, the opposing troops are deployed a few hundred metres apart. On the **south bank of Pangong Tso**, they are occupying heights that overlook each other's military camps and vital road communications.
4. With such close and large deployment, coupled with lack of trust after the [June 15-16] Galwan incident [in which 20 Indian soldiers were killed], the pre-emptive occupation of the Kailash Range by Indian troops on August 29-30, and the PLA's provocative action on September 7 [when shots were fired along the LAC for the first time in 45 years], the situation on the ground, particularly in the **Chushul sector**, is indeed very tense and explosive.
5. Besides, accusations and counter-accusations flying thick and fast are only adding to the tension.

What does domination of the Fingers area by the Chinese mean for India?

6. On the north bank of Pangong Tso, there are eight major finger-like spurs coming down to the Tso (lake). From heights along these spurs, one can observe military activity on the north and south banks of Pangong Tso.
7. The Chinese and Indian (perceived) LACs are about 8 kilometres apart (between Finger 4 and Finger 8) in this area. In May, the PLA occupied this disputed area, deployed troops on Finger 4, and blocked Indian troops, which used to earlier patrol the areas up to Finger 8.

What are the advantages India gets by occupying the heights in Chushul sector?

8. Heights in the mountains enable observation of the adversary's military activities in the (visible) area, and the ability to bring down accurate direct and indirect fire on the chosen enemy target.

What if the talks don't lead to any disengagement on the ground?

9. In the current situation, it will be a long haul on both the diplomatic and military fronts. India's forces on the ground have to remain alert to ensure that the PLA does not take any advantage during the lull created by long diplomatic engagement.
10. Remember, it took nearly six years to resolve the Sumdorong Chu incident (1986) diplomatically.

The Chinese are also present near Demchok and Sub Sector North. How does India deal with that?

11. In Demchok, the PLA has been objecting to India's non-military developmental activities — road and water channel — for India's civilian population. About 90 km from Demchok, at Chumar, it had made territorial claims and military advances in September 2014.
12. There has been an LAC-related dispute in the Depsang Plains in Sub Sector North. In April 2013, the PLA troops set up a temporary camp in our area, but later withdrew. They have again occupied some

area claimed by us. This has resulted in additional deployment of troops, including armour and artillery by both sides.

13. All these disputes in Eastern Ladakh, and elsewhere, are related to the LAC which has not been delineated on the maps. India has made many efforts, even at the highest level, but the Chinese have steadfastly refused. An ambiguous LAC enables the Chinese to continue with frequent pin-prick activities, and thus maintain political and military pressure on India.
14. In the recent incidents, China has deliberately violated all the confidence-building agreements and the perceived alignment of the LAC until now. Unless the LAC is delineated on the map, without prejudice to the final boundary settlement, such violations of Indian territory by the PLA are likely to continue, as these suit China strategically.

How will India cope if the Eastern and Central sectors too, see a Ladakh-like situation?

15. The situation in eastern Ladakh has already caused tension and the deployment of additional troops along the LAC and vulnerable points in the Central and Eastern sectors. This has become necessary due to the breach of trust with China.

What logistics challenges will Indian troops face in establishing defences in the coming months?

16. We have never deployed such large forces (Army, Air Force and paramilitary forces) in Ladakh earlier. As road access to Ladakh will not be available between mid-November and mid-May (2021), the winter stocking requirement for civilians and the military is huge. The IAF will remain heavily committed for essential daily maintenance and movement of troops whenever necessary.

What are the chances of the Ladakh situation leading to a conflict? Is there a weather window?

17. Climatically, intense conflict chances remain high until mid-November. The winter months will reduce the intensity, but we cannot expect a complete stoppage. Aerial and ground surveillance, infantry and artillery deployments will continue.

How important will be the role of the IAF in case of any armed conflict?

18. Today, one cannot imagine any armed conflict situation without synergy and jointness among armed forces.
19. The IAF has a crucial role at the strategic and operational levels. Besides its primary role of protecting air space and vulnerable areas/assets, it will be actively engaged in aerial reconnaissance, destroying enemy targets and providing tactical and logistic support to the Army.

What are the chances of this situation turning into a two-front threat with Pakistan also throwing its weight behind China?

20. China and Pakistan are already engaged in a ‘collusive threat’ (engaged in secret or hidden avowed goals) vis-à-vis India.
21. China is unlikely to bank on Pakistani collaboration or participation in any large-scale conflict with India. In the current scenario, however, a limited China-Pakistan military collaboration in the Karakoram Pass region cannot be ruled out. Its manifestations could be activation of diversionary military movements by Pakistan in Siachen and Kargil sectors, and an intensification of proxy war conditions in Jammu & Kashmir.

What else can be done by the Government of India to make it easier to craft a long-term China strategy or negotiate a solution?

22. National security, particularly armed conflict issues, requires a ‘whole of the government’ approach.
23. Unfortunately, we in India have not come out of the habit of working in ministerial silos and stovepipes which in the past have often resulted in military operations not achieving the desired strategic goals. Unlike western democratic nations, our ministers and civil officials are still shy of involving military personnel directly in defence policy-making or while negotiating such issues with foreign political leaders.

TOPIC 15. DATA HARVESTS

1. The Government of India on Wednesday decided to set up an “expert committee” under the National Cyber Security Coordinator in the National Security Council Secretariat following a three-part investigative series by [The Indian Express](#). The committee will study the reports, evaluate their implications, assess any violations of law, and submit its recommendations within 30 days.
2. The series reveals how a Shenzhen-based information technology firm, Zhenhua Data, with links to the Chinese government and military, is monitoring over 2.5 million individuals across the world, including at least 10,000 Indians. The investigation has elicited a range of responses.
3. *The Indian Express* attempts to frame the context given the prevailing situation on the India-China border, the scale and legality of the operations, the technology involved, and the end-use possibilities, given the trove of information being collected.

China is Watching: The background

4. Over the past decade, the rapid evolution of Internet technology, cheap phones, and cheaper data, has transformed the lives of urban and rural Indians in ways that now seem irreversible.
5. With smartphones becoming ubiquitous, technology improving accessibility, and with probably the cheapest data in the world (Rs 6.5 per GB), almost every phone is a data device today.
6. Huge emphasis on digitisation of government services by Prime Minister [Narendra Modi](#), and the demonetisation of Rs 500 and Rs 1,000 currency notes in November 2016, have turned mobile phones into almost a KYC device that is linked to the individual and her/his identity: [Aadhaar](#) authentication is facilitated by the mobile phone; instant transfer of funds between bank accounts is enabled via UPI.

AN EXPRESS INVESTIGATION - PART ONE

China watching: President, PM, key Opposition leaders, Cabinet, CMs, Chief Justice of India...the list goes on

Over 10,000 Indians, entities from politics to business, judiciary to media, even crime-accused, tracked by big-data firm linked to Chinese govt

China ducks response, website pulled down after Express sends questions

INSIDE

CHINA IS WATCHING

TONIGHT'S PART TWO

FROM CHENNAI TO LIMA: TO JUDGES AND TRIBUNAL HEADS, JK TO NORTH-EAST

PVAIDYANATHAN/INTER, CHENNAI; KARMAI DHEERISH/NEW DELHI, SEPTEMBER 13

CALLING itself a pioneer in using big data to “protect India and the great representation of the Chinese nation”, a Shenzhen technology company with links to the Chinese government, the All India Congress Committee, and the Communist Party, is monitoring over 10,000 Indian individuals and organisations in its global database of “foreign targets”, an investigation by *The Indian Express* has revealed.

The range of targets in India identified and monitored in real time by Zhenhua Data includes India’s top diplomats, defence and intelligence agencies, the Chinese Consulate in Lima and its overseas – in both health and depth.

From President Ram Nath Kovind and Prime Minister Narendra Modi to Congress leader P. V. Narasimha Rao and Harsimrat Kaur Badal, Chief Ministers Manohar Parrikar, Ashok Gehlot and Amarinder Singh, and former Chief of Defence Staff Bipin Rawat to Justice Ranjan Gogoi and Justice Dipak Misra, Chief Ministers of Tamil Nadu, Kerala, Andhra Pradesh, Bihar, Jharkhand, West Bengal, Odisha, Assam, Nagaland, Manipur, Arunachal Pradesh, Meghalaya, Tripura, and the Governor of the Reserve Bank of India, Jayant Sinha, and the Comptroller and Auditor General, Vinod Rai, are among the 10,000 tracked.

CONTINUED ON PAGE 10

WHAT IS HYBRID WARFARE

What data they collect, why cause for concern

Range of targets, sweep of electronic data, its end use underline surveillance threat

JAY MAZDOOMDAAR & VAIDYANATHAN/INTER, NEW DELHI, SEPTEMBER 13

EARLY THIS month, the Chinese-only website of Zhenhua Data Information Technology Co, the company monitoring foreign targets, was pulled down soon after *The Indian Express* approached it for comments. What kind of data has it collected on the targets, what is the scope of its activities, and what is its end use? What is the nature of hybrid warfare, what's the cause for concern? Here are the key questions answered:

What does Zhenhua Data do?

From R&D to low-cost missiles to the moon and Mars and securing India's space programme, the company monitors the subjects' digital footprint across social media and maintains an “information library” which includes content not just from news sources, but also from other sources, including documents, even positions of imprisonment. Significantly, it builds

CONTINUED ON PAGE 10

7. Now, three out of four smartphones sold in India during April-June this year, were Chinese brands; in the previous quarter, four out of five phones sold were Chinese. Most phones also come pre-installed with [Facebook](#), [Google](#), YouTube, and many other social media platforms.
8. India has banned 224 Chinese apps including TikTok, CamScanner and [PUBG](#). In the US, TikTok may soon change hands. What is at the centre of such actions in India and the West is fear at the app level, and also at the pipe level (with companies such as [Huawei](#) and ZTE), that personal data may be compromised and may find their way into Chinese servers. Beijing denies this, but countries are sceptical, and turning more cautious — given particularly the nature of an assertive and ambitious China, which is being seen as expansionist today.

Question of Legality

9. Zhenhua Data has scraped personal information from about a dozen social media platforms, and many other online sources. At the heart of the legal argument is the baseline assumption: can consent given to Facebook,

Twitter, Wiki, Medium, Youtube and Instagram, etc. be taken as consent for any third party scraping information from these platforms?

10.Two decades ago, this might have been all right. But the exponential rise in processing capacity, rapid evolution in big data analytics and artificial intelligence, has completely changed the paradigm.

11.Increasingly, it is becoming more and more obvious that companies have no skin in the game in what is said or written or appears on their platforms; they claim no intermittent liability.

12.The Personal Data Protection Bill, once it becomes law, will place responsibilities on the platforms, be it Twitter or Facebook, which are the primary collectors of data, to keep personal information safe.

13.There will be intermediaries like account aggregators and consent managers, who will keep a tab on these platforms, and their possible misuse.

14.But can these platforms or the intermediaries really act against a sovereign nation like China, if it is the ultimate source of misuse?

Operations and scale

15.Zhenhua Data has collected information on about 2.5 million key individuals and over 650,000 organisations, from countries across the world.

16.There are thousands of individuals in India, along with their network of families and associates tracked across multiple social media platforms. The Indian database includes prominent people — ministers, businesspersons, entrepreneurs, defence personnel, bureaucrats and diplomats, scholars and researchers, scientists and academics.

17.The first question this throws up is:

- a. What is the point in tracking public figures, about whom so much is known anyway?
- b. That is exactly the motivation — because tracking them gives you an insight into their followers' minds. How followers or friends react (like/share/comment) to any public figure on open platforms reveals a lot about each of them.
- c. Zhenhua Data is not necessarily interested in every follower of a public figure. But that is the thing about big data. It is about casting the net as wide as possible where individuals are not necessarily targeted as consequential in themselves, but simply because they complete the wide arc. The more information one collects and correlates, the more one gets to discover. Leaving out certain members of, say, a leadership team of any setup because they are not exciting enough defeats that purpose.

18.The second question that follows is:

- a. So what, many companies have been doing this for years, both in India and in other countries?
- b. Like any big data operation involving OSINT (open-source intelligence), Zhenhua Data deals in volumes.
- c. First, the sweep: how many people it tracks. Second, the depth: how many data points it engages to collect information about every person it tracks. The potential of the database for 'hybrid warfare' depends on both factors: how many they know about, and how much they know about each of them.
- d. Such an operation may not be immediately successful in filling all the information columns against each name. But it spells out the data ambition the company wants to achieve over time. The chances of striking gold — actionable intelligence — multiply as the data pool grows. And the chances of even a fraction of the Overseas Key Information Database — already 5 billion pieces of information and counting — yielding what is called "useable data" is motivation enough to keep invested in the project.
- e. Companies are subject to regulation, and can be held accountable or asked questions by elected legislatures. In contrast, a Chinese company, from an opaque authoritarian set-up, mining big data in a more open democratic system doesn't have similar checks and balances.
- f. Also, propaganda — misinformation, disinformation and fake news — has always been a big item on the agenda when countries go to war. But what big data allows now is to customise data for millions instantly, making rapid response possible.
- g. The sweep of Zhenhua's targets, from politicians and CMs at the Centre and states to legislators in J&K and the Northeast, scientists in critical technology institutions to a range of tech start-ups and over 6000 accused of a range of crime, all monitored over years, yields a staggering volume of information which can be analysed by sophisticated big-data tools and processed as per the end user.

19.Then the third question is:

- a. Basically, you can't do much... what is the point then?
- b. It is not that you cannot do anything. Experts suggest the government must educate citizens on cyber hygiene; a stricter level of hygiene for those in important positions from a security point of view. With the mobile phone becoming a data device, and storing almost all personal information, "key individuals"

- should be cautious about sharing personal information on social media or allowing platforms to track their geo-location, etc.
- Not much can be done perhaps to stop the collection of data all together – given what technology allows, and particularly since open-source public data is by definition open and public. Big platforms such as Facebook and Twitter discourage automated scraping and bots, but recent events suggest this is more to maintain their monopoly of data for advertisement.
 - Yes, individual governments can force them to make mass scraping more difficult, but overdoing it may change the nature of the platforms and these companies are no pushovers. So, without sweating much over the source of the data and how it is collected, governments can invest in predicting possible strategic end uses foreign agencies may utilise such a database for. That means building capacity to pre-empt disinformation and propaganda campaigns. Given the bewildering pace of change in cyber security, the new battlelines are drawn.

TOPIC 16. CYBER SECURITY

- [The Indian Express's 'China is Watching'](#) investigation has spotlighted an elaborate operation by a Shenzhen-based technology company with links to the government in Beijing and the Chinese Communist Party, to keep tabs on a very large number of individuals and entities in India.
- The company, Zhenhua Data Information Technology Co. Limited, calls itself a pioneer in using big data for "hybrid warfare" and the "great rejuvenation of the Chinese nation".
- China's authoritarian government, ruling party, military, and many private companies frequently operate as a giant, coordinated operation, of which countries around the world are targets.

When did China's People's Liberation Army (PLA) step into the field of cyber warfare?

- It was soon after the Gulf War of 1991 that the Chinese realised that the days of conventional warfare were rapidly coming to an end. Pavithran Rajan, a former Indian Army officer and information warfare expert, who has authored 'Engaging China: Indian Interests in the Information Age', says the Chinese understood that American technology was far ahead of them. "They analysed that if they get into the ICT (information and communications technology), they could leapfrog a couple of generations and get ahead. This decision also coincided with China turning into the electronics factory of the world."
- In 2003, Central Committee of Chinese Communist Party and China's Central Military Commission officially approved concept of "Three Warfares", comprising psychological, media, and legal warfare. "It was then decided at highest levels that PLA should be an army ready to fight a war in information domain by 2020," Pavithran said. Soon, PLA began to set up intelligence units dedicated to cyber operations.

When did the world discover the PLA's commitment to cyber warfare?

- In February 2013, the Alexandria, Virginia-headquartered American cyber security firm Mandiant published a report that blew the lid off China's cyber espionage operations.
- The Mandiant report documented evidence of cyber attacks by PLA Unit 61398, whose exact location and address in Pudong, Shanghai, the report revealed.
- Unit 61398 is the 'Military unit Cover Designator' (MuCD) of the PLA's Advanced Persistent Threat (APT) unit that has been accused of several computer hacking attacks.
- "We refer to this group as "APT1", and it is one of more than 20 APT groups with origins in China," the Mandiant report said. "APT1 is a single organization of operators that has conducted a cyber espionage campaign against a broad range of victims since at least 2006. From our observations, it is one of the most prolific cyber espionage groups in terms of the sheer quantity of information stolen."
- According to the Mandiant report, APT1 had stolen billions of terabytes of data from 141 companies across 20 major industries.
- "APT1", the report said, "is believed to be the 2nd Bureau of the People's Liberation army (PLA) General staff Department's (GsD) 3rd Department, which is most commonly known by its Military unit Cover Designator (MuCD) as unit 61398. The nature of "Unit 61398's" work is considered by China to be a state secret; however, we believe it engages in harmful "Computer Network Operations". Unit 61398 is partially situated on Datong Road in Gaoqiaozhen, which is located in the Pudong New Area of Shanghai. The central building in this

compound is a 130,663 square foot facility that is 12 stories high, and was built in early 2007. We estimate that Unit 61398 is staffed by hundreds, and perhaps thousands of people."

12.The report also said Unit 61398 requires its personnel to be trained in computer security and network operations, and to be proficient in English.

What was the reaction to these revelations?

13.Former Northern Army Commander Lt Gen D S Hooda (Retd), who after retirement, headed a panel that called for setting up specialised information warfare units, said that in 2014, the United States government discovered that a Chinese unit had hacked into the Office of Personnel Management, a unit of the federal government, and taken out records of 21 million people. Around 4 to 5 million of these people worked for the US military, and included CIA agents.

14.“The hackers got hold of 127 page forms, listing every detail of the individual official. This was one of the biggest hacks of classified personnel documents,” Gen Hooda said.

15.The US Department of Justice under President [Barack Obama](#) indicted five PLA officers by name for cyber crime. The names and photos of the officers were released, and they were accused of hacking and stealing information from several companies. “It was for the first time that the US took such a step against a foreign power,” Pavithran said.

What is the nature of the civil-military fusion that China encourages?

16.According to Pavithran, China started a policy of weaponising its existing manufacturing capability of civilian products for military purposes by leveraging the control over any instrument by the original equipment manufacturer (OEM).

17.Most mobile phones, for example, are equipped with a ‘soft’ rather than a ‘hard’ switch, Pavithran said: “This means that even if you switch off the phone, the sensors inside continue to feed data to the cloud. Entire populations can be monitored with this control.”

18.China’s long experience of keeping its own people under surveillance has contributed to its expertise in individual surveillance, Gen Hooda said. “They know how to mine this data.”

19.According to Pavithran, the Chinese use this information for kompromat, a Russian term for any information that can compromise a person, and which can therefore, be used to blackmail him/her.

20.Gen Hooda said that in 2017, China passed a law under which all Chinese companies were supposed to assist the country’s intelligence-gathering operations. “They cannot say no. Besides there is a close link among the civil, military establishment and academia in China.”

Specifically, what are the military implications of this fusion?

21.China, Pavithran said, has graduated from being a force ready to fight information warfare to a force equipped for ‘intelligentised’ warfare. “They have managed to weaponise their appliances all over world.”This cyber prowess, he said, gives the PLA the ability to identify key personnel and directly target them in kinetic warfare.

TOPIC 17. UTTARAKHAND DEFENCE INFRASTRUCTURE

1. In the context of ongoing tensions and [territory issues with China](#) and Nepal, the Uttarakhand government, along with the defence forces, has taken measures to strengthen infrastructure along its international border.
2. In recent weeks, the state government has taken several major decisions that will help strengthen operations of both the Army and Air Force in the border areas of the hill state.

Why Uttarakhand matters

3. Uttarakhand shares a 350-km border with China and a 275-km boundary with Nepal. Five of the state's 13 districts are border districts. Chamoli and Uttarkashi share boundaries with China, whereas Udhampur Singh Nagar and Champawat have boundaries with Nepal.
4. Pithoragarh is strategically very sensitive as it has boundaries with both China and Nepal.

Radar and tactical airfields

5. In the recent development, the Uttarakhand government has agreed to [provide land to the Indian Air Force \(IAF\)](#) to set up air defence radars in three districts bordering China – Chamoli, Pithoragarh, and Uttarkashi. The IAF has also proposed to [develop a new Advanced Landing Ground](#) to facilitate its activities in the hill areas.
6. Air Marshal Rajesh Kumar, AOC-in-C, Central Air Command, had a detailed meeting with Chief Minister Trivendra Singh Rawat in Dehradun on Friday (September 11) on the proposals and the requirement of land.
7. It was decided that the government and the IAF would nominate nodal officers who would work together to identify land for these facilities.
8. A government official said the Advanced Landing Ground in Uttarakhand would be useful for refuelling of aircraft, and for loading and unloading of ammunition.
9. According to a release from the state government, Air Marshal Kumar said during the meeting that facilities of radar and airstrips at appropriate sites in Uttarakhand were necessary in view of the current circumstances.
10. Separately, the state cabinet earlier this month approved a proposal for the expansion of a helipad at the Kedarnath shrine in Rudraprayag district to make it suitable for operating the IAF's Chinook multi-mission choppers. These advanced machines require a helipad with an area of more than 5,000 sq m for safe landings and take-offs.

Filling gaps in telecom infra

11. The Uttarakhand cabinet has approved an amendment in the state's information technology (IT) policy to provide incentives of up to Rs 40 lakh to facilitate private telecom companies to install towers in "dark villages" in which telecommunication facilities are unavailable at present.
12. A total 438 "dark villages" have been identified in Uttarakhand, where no telecom service provider (TSP) or Internet service provider (ISP) extends services. These villages are mostly located along the state's border of China and Nepal, government sources said.
13. "A population of around 25,000 in over two dozen dark villages in my constituency lack telecommunication connectivity," Bishan Singh Chuphal, veteran state [BJP](#) leader and four-time MLA from the Didihat Assembly constituency (in Pithoragarh district, under Almora Lok Sabha constituency) bordering Nepal, said.
14. "Some people use Nepalese SIMs, which is not safe. Having telecom facilities here is extremely important for reasons of security. The government's move to facilitate telecom companies is important strategically," Chuphal said.
15. Also, villagers in border areas have traditionally acted as the eyes and ears of the defence forces, and telecommunications are a force multiplier in this regard.

Roads through a national park

16. In June this year, the Uttarakhand State Wildlife Advisory Board gave the go-ahead to transfer over 73 hectares of forest land in Gangotri National Park in Uttarkashi district for the development of roads totalling 35.66 km in length.
17. The government said in a statement that the Board had agreed to send the proposals to the National Wildlife Board because the construction of these routes through the national park was "very important for national security".
18. A senior official from the state Forest Department said that at present, ITBP and Army personnel have to walk 15-25 km from the starting points of these proposed stretches of road to reach the border. State Forest Minister Harak Singh Rawat said the roads will be in the national interest, and very important from the strategic point of view.

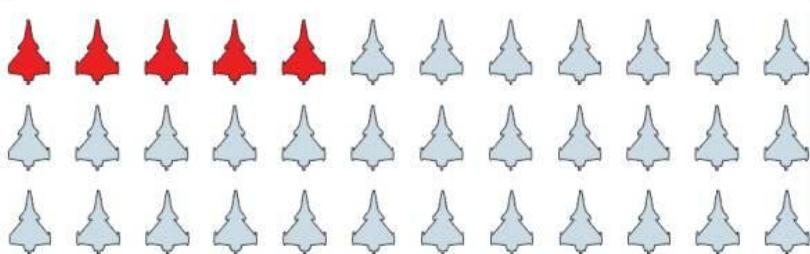
TOPIC 18. RAFALE FIGHTER JET

1. Calling it a “**historic day**” for India’s national security, Defence Minister [Rajnath Singh](#) Thursday said the induction of Rafale jets is important given the “atmosphere being created along the borders.”
2. The first batch of five [Rafale jets arrived in India on July 29](#), nearly four years after India signed an inter-governmental agreement with France to procure 36 of the aircraft at a cost of Rs 59,000 crore. The next batch of the jets is likely to arrive in October, and the last of the 36 aircraft will come to India by the end of 2021.
3. The state-of-the-art 4.5 Generation Rafale jet can reach almost double the speed of sound, with a top speed of 1.8 Mach. With its multi-role capabilities, including electronic warfare, air defence, ground support and in-depth strikes, the Rafale lends air superiority to the Indian Air Force.
4. India’s last major acquisition of fighter planes was 23 years ago, when the Sukhois were imported from Russia. The IAF is down to 31 fighter squadrons against the authorised strength of at least 42.

EXPLAINED | THE FIRST BATCH by The Indian Express



The five Rafale fighter jets will resurrect the Number 17 Golden Arrows squadron of the Indian Air Force. It will take IAF's squadron strength to 31.



When all the 36 Rafale jets are delivered by end of 2021, it will take it to 32 squadrons. The sanctioned strength is 42 squadrons.

#QUIXPLAINED

1



The state-of-the-art 4.5 Generation Rafale Jet can reach almost double the speed of sound, with a top speed of 1.8 Mach.



With its multi-role capabilities, including electronic warfare, air defence, ground support and in-depth strikes, the Rafale lends air superiority.

#QUIXPLAINED



China's J20 Chengdu jets are called fifth-generation combat jets. Compared to 4.5 generation Rafale, the J20 have no actual combat experience.

The Rafale is combat proven. It has been used by the French Air Force for its missions in Afghanistan, Libya, and Mali. It has also been used for missions in Central African Republic, Iraq and Syria. It can also carry more fuel and weapons than the J20.

#QUIXPLAINED

3



BEYOND VISUAL RANGE
(BVR) OF OVER 100 KM

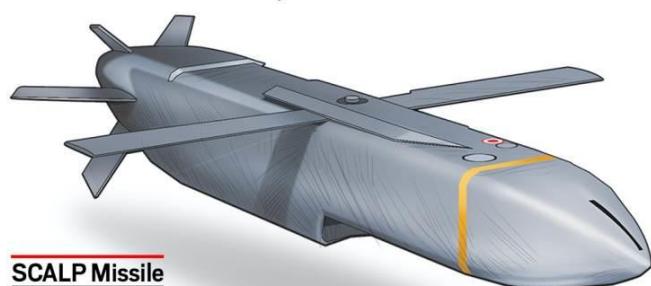
Each Rafale aircraft has 14 storage stations for weapons. It comes with the Meteor air-to-air missile, which has a Beyond Visual Range (BVR) of over 100 km, travelling at a top speed of Mach 4.

#QUIXPLAINED



The F16 jets, used by Pakistan, carry the AMRAAM missile, which has a BVR of 75 km.

RAFALE CAN ALSO OUTPERFORM F16 IN DOGFIGHTS



SCALP Missile

Rafale jets come with SCALP, the air-to-ground cruise missile, that has a range over 300 km and MICA air-to-air missile for close-quarter dogfights, and for BVR.

HAMMER Missile

HAMMER (Highly Agile and Manoeuvrable Munition Extended Range), an air-to-ground precision guided missile, from French conglomerate Safran, can be used on bunker-type hardened targets, within the range of 70 km.



Text: Krishn Kaushik;
Illustration: Suvajit Dey

#QUIXPLAINED

5

TOPIC 19. FORENSIC CLONING

1. The case registered against actor Rhea Chakraborty, her brother Showik and four others by the Narcotics Control Bureau (NCB) is based on chats that the Enforcement Directorate (ED) retrieved from the “clones” of the two mobile phones of Rhea which allegedly contain evidence of her discussing narcotics.

What exactly is mobile phone forensic cloning?

2. It forms a part of mobile device forensics and is basically a bit-for-bit copy of an entire mobile device. Some investigating agencies and forensic science laboratories carry out “imaging” or forensic cloning of a mobile phone or any digital device if they believe it would aid investigation or help prove a case against someone in a court of law.

How is mobile phone cloning different from copy pasting the entire data from a mobile device or laptop?

3. In the traditional copy-pasting of data, only the active files — or the files currently present on the device — are copied. It would not include files that have been deleted or overwritten by the user. In crime investigations, where there is probability of incriminating data being deleted, using the imaging technique, which is also known as physical acquisition, becomes important.

4. The physical acquisition of mobile phone data is a bit-for-bit copying of the data on to a physical storage. This also includes all deleted data. In other methods, only the folders are copied, and not the deleted files.

Can data or allegedly incriminating chats etc. found using imaging be used as evidence in a court of law?

5. Yes. As per Special IG Brijesh Singh who formerly headed the Maharashtra cyber police, if the information found on a particular device is accompanied by a 65 (B) Information Technology Act certificate — which gives the condition for handling the electronic devices in a particular manner for it to be admissible, such as it not being tampered — it can be used in a court of law against an individual.

6. So apart from it being used as an investigation tool, it also carries evidentiary value in a court of law.

What are some of the cases where mobile forensic cloning has helped investigators?

7. Apart from several terror-related cases, one of the best uses of forensic cloning of a mobile phone was seen in the Payal Tadvi case, the second-year resident doctor at Nair Hospital in Mumbai who was allegedly driven to suicide on May 22, 2019.

8. Her parents had alleged that she was harassed by three doctors, and the Maharashtra Forensic Science Laboratory (FSL) managed to retrieve the photograph of a suicide note she had written from the forensic clone of her phone.

9. As per police, the three doctors, who were later charged with abetment to suicide, had allegedly deleted the suicide note from her phone. However, once the note was found, it was used as crucial evidence against the three doctors.

Can all data you delete from your phone or laptop be recovered? Are data on your phone / laptop that you sell or give for repairs, vulnerable?

10. To an extent, this depends upon the device. Generally, data that are deleted from the device can be recovered using software. However, in some devices made by Apple and Blackberry, the data recovery process is difficult and even a factory reset could make it difficult to recover data on these phones.

11. However, it is recommended that in order to protect data on a device that you sell, from being recovered and then possibly misused for extortion, you should encrypt files on your device and then do a factory reset before selling it.

12. Encrypting data on phones is an option that most android phones provide in settings. You then put a password or PIN to it.

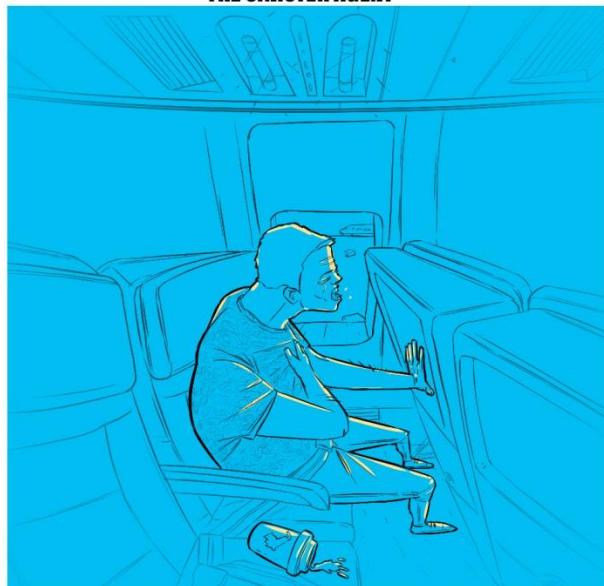
Is encryption enough to save data?

13. In spite of encryption, the security of your data would depend upon how advanced the encryption is. There is a method called ‘brute force acquisition’ using which a password or PIN is extracted by trial and error. Several law enforcement agencies procure such software for crime investigations, especially cases related to terrorism.

TOPIC 20. NOVICHOK

1. **Alexei Navalny**, a politician and corruption investigator who is one of Russian President Vladimir Putin's fiercest critics, **fell ill on a flight back to Moscow from Siberia** on August 20 and was taken to a hospital in the Siberian city of Omsk after the plane made an emergency landing. Tests performed at the German hospital showed the presence of Soviet-era nerve agent Novichok.
2. In a statement, Chancellor Angela Merkel's spokesman Steffen Seibert said testing by a special German military laboratory had shown "proof without doubt of a chemical nerve agent from the Novichok group".
3. Novichok has not been **used in warfare**. In March 2018, it was used as a poison to target Skripal and his daughter in the city of Salisbury in England. Both of them survived. Later, the British government accused Russia of attempted murder. Russia though denied the accusations and blamed Britain for the poisoning instead.
4. Much of what we know of Novichok came from the writings of scientist Vil Mirzayanov and his colleague Lev Fyodorov, who were formerly connected to the Soviet Union's chemical weapons development institute. Their publication appeared in 1992, and it suggested that the nerve gas is 10 times more effective in killing people than the US equivalent, known as VX.

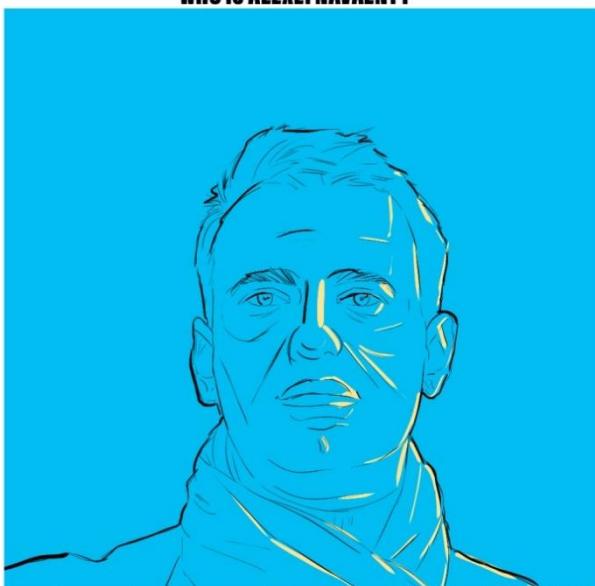
#QUIXPLAINED

NOVICHOK
THE SINISTER AGENTEXPRESS
explained.

Germany said there was "unequivocal proof" that Russian opposition leader Alexei Navalny was poisoned with Novichok while on a flight to Moscow from the Siberian city of Tomsk.

01/07

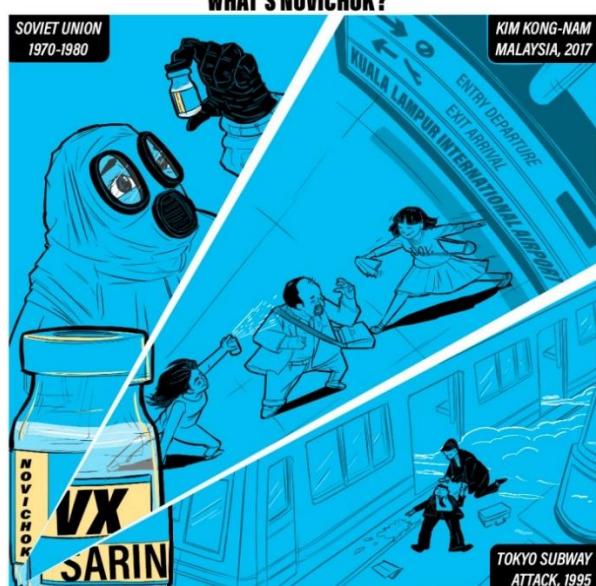
#QUIXPLAINED

WHO IS ALEXEI NAVALNY?EXPRESS
explained.

An anti-corruption blogger and a thorn in the side of Vladimir Putin for long, Navalny has faced arrests for his relentless attacks on the Russian President. He has in the past called the ruling United Russia party one of "crooks and thieves" and led several nationwide protests against the Putin government.

02/07

#QUIXPLAINED

WHAT'S NOVICHOK?EXPRESS
explained.

A nerve agent developed by the Soviet Union in the 1970s and '80s. It's **6-10 times more potent than VX** & was used to kill the half brother of Kim Jong-un in 2017. Novichok is **more sinister than sarin**, the gas used in 1995 Tokyo subway attack

03/07

#QUIXPLAINED

EXPRESS explained.

HOW DOES IT WORK?

It disrupts communication between nerves and muscles & has the same effect on victims that an insecticide has on a cockroach. Victims encounter twitching, spasms, heart failure and/or respiratory arrest. The end is swift - 30 seconds to 2 minutes. If the dose or exposure is minimal, death may be delayed. But recovery is long and painful.

04/07

#QUIXPLAINED

EXPRESS explained.

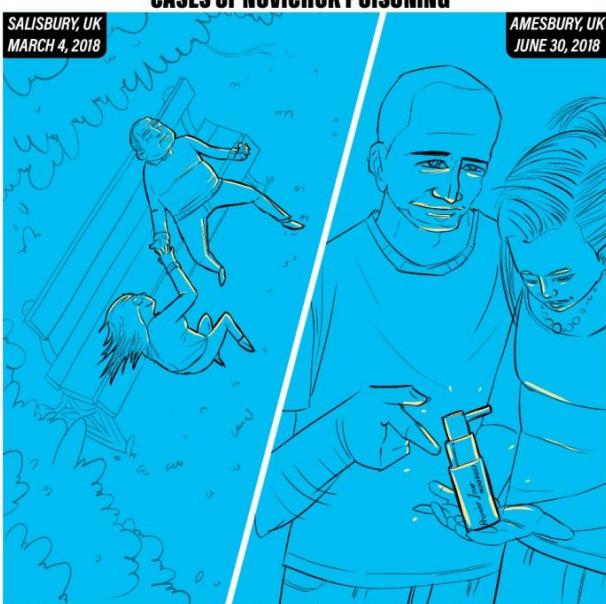
ARE THERE ANTIDOTES?

Atropine is the first line of treatment. But at best, they treat the symptoms - vomiting, diarrhoea and urinary incontinence - that occur all at once and usually lead to death

05/07

#QUIXPLAINED

EXPRESS explained.

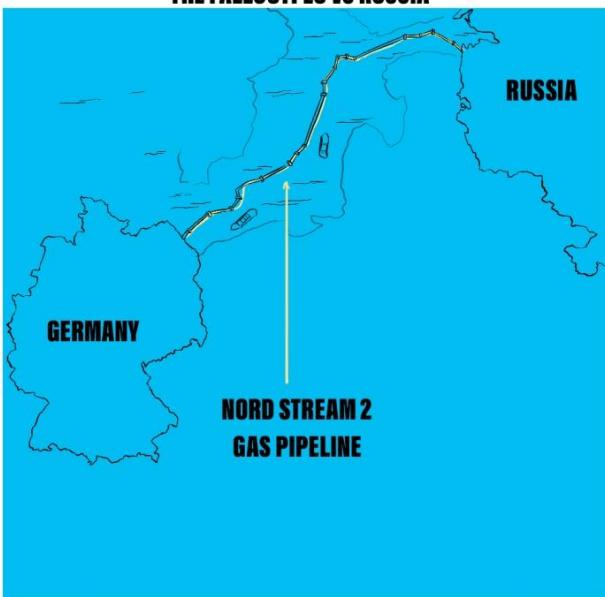
CASES OF NOVICHOK POISONING

- A former Russian spy Sergei Skripal and his daughter Yulia Skripal were found poisoned & unconscious on a park bench.
- British nationals Charlie Rowley & Dawn Sturgess were exposed after handling a fake perfume bottle that contained Novichok. Sturgess died in hospital days later. Rowley lives with the effects of the poison.

06/07

#QUIXPLAINED

EXPRESS explained.

THE FALLOUT: EU VS RUSSIA

The Alexei Navalny incident has led to Germany threatening to pull the plug on the **Nord Stream 2 gas pipeline project** to bring gas from Russia to Germany under the Baltic Sea. The European Union too is divided on how to deal with Russia. While Poland and the Baltic nations are opposed to Russia, Hungary, Italy and France have warmer ties with the Kremlin.

TEXT - ADRIJA ROYCHOWDHURY, ART - SEPHIN

07/07

TOPIC 21. ARTEMIS

1. NASA published outline for Artemis program, which plans to send next man and first woman to lunar surface by year 2024. Last time NASA sent humans to Moon was in 1972, during Apollo lunar mission.

What is the Artemis program?

2. With the Artemis program, NASA wishes to demonstrate new technologies, capabilities and business approaches that will ultimately be needed for the future exploration of Mars.
3. The program is divided into three parts, the first called Artemis I is most likely to be launched next year and involves an uncrewed flight to test the SLS and Orion spacecraft. Artemis II will be the first crewed flight test and is targeted for 2023. Artemis III will land astronauts on the Moon's South Pole in 2024.

What does it take to go to the moon?

4. For NASA, going to the moon involves various elements – such as the exploration ground systems (the structures on the ground that are required to support the launch), the Space Launch System (SLS), Orion (the spacecraft for lunar missions), Gateway (the lunar outpost around the Moon), lunar landers (modern human landing systems) and the Artemis generation spacesuits – are all ready.
5. NASA's new rocket called SLS will send astronauts aboard the Orion spacecraft a quarter of a million miles away from Earth to the lunar orbit.
6. Once the astronauts dock Orion at the Gateway — which is a small spaceship in orbit around the moon — they will be able to live and work around the Moon, and from the spaceship, will take expeditions to the surface of the Moon.
7. In June, NASA finalised a contract worth \$187 million with the Orbital Science Corporation of Dulles, Virginia, which will be responsible for the design and logistics.
8. The astronauts going for the Artemis program will wear newly designed spacesuits, called Exploration Extravehicular Mobility Unit, or xEMU. These spacesuits feature advanced mobility and communications and interchangeable parts that can be configured for spacewalks in microgravity or on a planetary surface.

NASA and the moon

9. The US began trying to put people in space as early as 1961. Eight years later, on July 20, 1969, Neil Armstrong became the first human to step on the Moon as part of the Apollo 11 mission. While climbing down the ladder towards the surface of the Moon he famously proclaimed, "That's one small step for a man, one giant leap for mankind."
10. Armstrong along with Edwin "Buzz" Aldrin walked around the moon for over three hours, doing experiments and picking up bits and pieces of Moondust and rocks. They left a US flag on the Moon along with a sign that said, "Here men from the planet Earth first set foot upon the moon July 1969, AD. We came in peace for all mankind."
11. Apart from the purpose of space exploration itself, NASA's endeavour to send Americans to the Moon again is to demonstrate American leadership in space and to establish a strategic presence on the Moon, while expanding the US global economic impact.
12. "When they land, our American astronauts will step foot where no human has ever been before: the Moon's South Pole," says NASA.

Moon exploration

13. In 1959, the Soviet Union's uncrewed Luna 1 and 2 became the first rovers to visit the Moon. Since then, seven nations have followed suit. Before the US sent the Apollo 11 mission to the Moon, it sent three classes of robotic missions between 1961 and 1968. After July 1969, 12 American astronauts walked on the surface of the Moon until 1972. Together, the Apollo astronauts brought back over 382 kg of lunar rock and soil back to Earth for study.
14. Then in the 1990s, the US resumed lunar exploration with robotic missions Clementine and Lunar Prospector. In 2009, it began a new series of robotic lunar missions with the launch of the Lunar Reconnaissance Orbiter (LRO) and the Lunar Crater Observation and Sensing Satellite (LCROSS).
15. In 2011, NASA began the ARTEMIS (Acceleration, Reconnection, Turbulence, and Electrodynamics of the Moon's Interaction with the Sun) mission using a pair of repurposed spacecraft, and in 2012, the Gravity Recovery and Interior Laboratory (GRAIL) spacecraft studied the Moon's gravity.
16. Apart from the US, the European Space Agency, Japan, China, and India have sent missions to explore the Moon. China landed two rovers on the surface, which includes the first-ever landing on the Moon's far side in 2019. The Indian Space Research Organisation (ISRO) recently announced India's third lunar mission Chandrayaan-3, which will comprise a lander and a rover.

TOPIC 22. NASA'S SONIFICATION PROJECT

1. While telescopes offer glimpses of outer space by translating digital data into stunning images, NASA's Chandra X-Ray Center (CXC) has gone a step further by unveiling a new 'sonification' project that transforms data from astronomical images into audio.
2. Users can now 'listen' to images of Galactic Centre, remains of a supernova called Cassiopeia A, as well as the Pillars of Creation Nebula, which are all located in a region around 26,000 light years away from Earth. The data has been collected by NASA's Chandra X-Ray Observatory, Hubble Space Telescope and Spitzer Space Telescope — each of which is represented by a different musical 'instrument'.

What is data sonification?

3. Data sonification refers to the use of sound values to represent real data. Simply put, it is the auditory version of data visualisation. In NASA's recent Chandra project, for instance, data is represented using a number of musical notes. With this data sonification project, users can now experience different phenomena captured in astronomical images as an aural experience. The birth of a star, a cloud of dust or even a black hole can now be 'heard' as a high or low pitched sound.

How did NASA translate astronomical images into sound?

4. NASA's distant telescopes in space collect inherently digital data, in the form of ones and zeroes, before converting them into images. The images are essentially visual representations of light and radiation of different wavelengths in space, that can't be seen by the human eye.
5. The Chandra project has created a celestial concert of sorts by translating the same data into sound. Pitch and volume are used to denote the brightness and position of a celestial object or phenomenon. So far, the astronomers behind Project Chandra have released three examples made using data collected from some of the most distinct features in the sky — the Galactic Centre, Cassiopeia A, and Pillars of Creation Nebula.

The Galactic Centre

6. First example is that of Galactic Centre, which is rotational centre of Milky Way galaxy. It comprises a collection of celestial objects — neutron and white dwarf stars, clouds of dust and gas, and most notably, a supermassive black hole called Sagittarius A*, that weighs four million times mass of sun.
7. Based on data gathered by Chandra X-ray Observatory, and Hubble and Spitzer Space Telescopes, an image is rendered using X-ray, visible and infrared light before being translated into sound. Translation begins on left side of image and then moves to right. Stars and other compact sources are represented using individual short notes, while a longer humming sound is used to denote clouds of gas and dust. It all builds up to a crescendo, which takes place around the bright region to the lower right of the image where Sagittarius A* is located.

Cassiopeia A

8. Located around 11,000 light years away from Earth in the northern Cassiopeia constellation, Cassiopeia A is one of the most well-known remnants of a once-massive star that was destroyed by a supernova explosion around 325 years ago, according to NASA. The image shows the supernova remnant as a ball of different coloured filaments. Each colour represents a particular element — red is used for silicon, yellow for sulfur, purple denotes iron, while green is used for calcium. Each of these filaments is also assigned its own unique sound.
9. Unlike with the sonification of the Galactic Centre, where the translation plays from left to right, here the sounds move outwards from the centre of the circular structure.

The Pillars of Creation

10. The iconic Pillars of Creation is located in the centre of the Eagle Nebula, which is also known as Messier 16. The Hubble Star Telescope was used for images of the celestial structure, which comprises wispy towers of cosmic dust and gas. Here too, different colours are used to represent elements — blue for oxygen, red for sulphur and green for both nitrogen and hydrogen.
11. Like with the Galactic Centre, this sound translation also plays from left to right. However, the sound has an eerie effect, with sharp whistles representing stars and low howls indicating the presence of gas clouds. A user has the option of listening to all three images at once as an ensemble, where each telescope plays a different instrument, or individually as a solo, NASA stated in a recent blog post.

Why is this sonification project useful?

12. The sonification project was led by the Chandra X-ray Center in collaboration with NASA's Universe of Learning Program (UoL), which aims to "incorporate NASA science content into the learning environment effectively and efficiently for learners of all ages". Over the years, NASA has been working towards making data about space accessible for a larger audience. According to a statement released by team Chandra, sonification projects like this allow audiences — including visually-impaired communities — to experience space through data.

TOPIC 23. PHOSPHINE GAS

1. Is there life on Venus? The idea was triggered recently after astronomers **announced** discovery of phosphine gas in atmosphere of planet. Phosphine, a colourless but smelly gas, is known to be made only by some species of bacteria that survive in absence of oxygen. The international team of scientists reported traces of phosphine in concentration of approximately 20 parts per billion, thousands to millions of times more than what could otherwise be expected. Their findings were published in Nature Astronomy.

The story so far:

2. An international team of astronomers led by Jane S. Greaves of Cardiff University and University of Cambridge, U.K., has announced the discovery of traces of a molecule known as phosphine on Venus. This has caused great excitement because, given the chemical and geological composition of Venus, this can imply the existence of life forms that release this substance through bio-chemical pathways.
3. The researchers say in paper, “[Phosphine] could originate from unknown photochemistry or geochemistry, or, by analogy with biological production of [phosphine] on Earth, from presence of life.” The paper, published on September 14 in Nature Astronomy, is a careful exposition of work done over many years. Professor Greaves first observed phosphine on Venus using James Clerk Maxwell Telescope in Mauna Kea observatory in Hawaii in 2017. Pursuing the search further with the 45-telescope array ALMA (Atacama Large Millimeter/submillimeter Array) in Chile led to a confirmation of their observations by this extremely sensitive instrument in 2019.



LIFE ON VENUS?

Scientists have found the presence of a colourless, smelly gas called phosphine in the atmosphere of Venus. It's known to be primarily produced by some species of bacteria, that survive in oxygen-starved environments

Could Venus possibly be hosting extraterrestrial life?



#QUIXPLAINED

01



WHAT WE KNOW ABOUT PHOSPHINE

In nature, it is formed mainly by biological processes. Geochemical processes like volcanic or meteorite activity are also known to produce phosphine. But scientists perceive that if the gas had been produced by these sources, its concentration in the atmosphere of Venus would have been millions of times less



#QUIXPLAINED

02



SO, IS THERE LIFE ON VENUS?

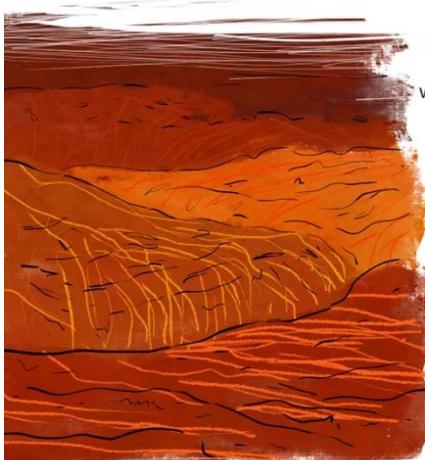
Too early to say.

Presence of phosphine has to be reconfirmed with additional evidence.

It's also possible that other processes, **so far unknown to us**, too produce phosphine

We know very high surface temperatures, extreme pressure and highly acidic atmosphere make Venus unsuitable for sustaining life as of now.

Though it wasn't so in the past.



#QUIXPLAINED

03



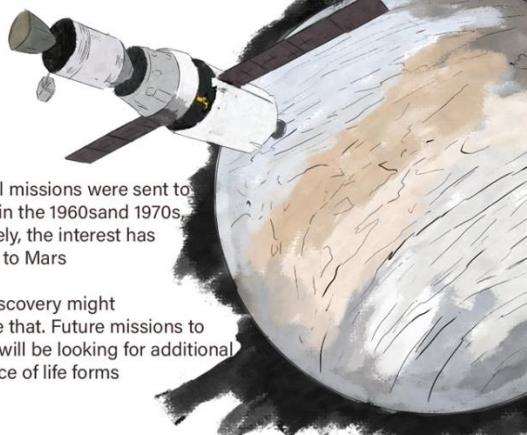
WHY THE EXCITEMENT?



The only way our current knowledge can explain the high concentration of phosphine near Venus is the presence of some biological process. For scientists, it probably offers the biggest hope in the search for extraterrestrial life, bigger than the discovery of water on some planets

#QUIXPLAINED

04



Several missions were sent to Venus in the 1960s and 1970s, but lately, the interest has shifted to Mars

This discovery might change that. Future missions to Venus will be looking for additional evidence of life forms

TEXT - AMITABH SINHA, ART - SEPHIN

05

#QUIXPLAINED

Have astronomers found definite signs of life?

4. The detected presence of phosphine on Venus does convey the possibility of life there. After detecting the phosphine and estimating the amount in Venus's atmosphere — 20 parts per billion — researchers have calculated whether this amount of phosphine can be produced by natural chemical processes, such as sunlight, volcanoes erupting and lightning. The other mechanisms could at most produce only ten-thousandth of the amount of phosphine they have detected. However, they do not rule out the possibility that there could be unknown natural processes (photochemistry or geochemistry) that can produce this amount of the biomarker. Therefore, more work is needed to prove that it is indeed because of bacteria, or some sort of life, that there is so much phosphine on Venus.

Why is phosphine gas considered a biomarker of life?

5. A molecule of phosphine gas consists of a phosphorus atom surrounded by three hydrogen atoms, just like ammonia consists of a nitrogen atom surrounded by three hydrogen atoms. On Earth, this molecule is produced by industrial processes. It is also produced by some anaerobic bacteria, which live in oxygen-sparse environments such as sewers, landfills, or even animal guts. If you can rule out the production of the gas through chemistry, it is the biochemical processes that form a source of the gas — the anaerobic bacteria — hence it is considered a biomarker in astronomy.

Has phosphine been found on other planets?

6. Yes, it has been seen on Jupiter and Saturn. As early as the 1970s, when the first exoplanets were not even discovered experimentally, phosphine was seen on Jupiter. But there it is said to form deep in the interiors of the gas giant and rise to the top, in a purely chemical process. But now, on Venus there is a doubt.

Venus is considered to be a hostile planet. How can life survive there?

7. The surface temperature of Venus, at about 470 degrees Celsius, is too hot to harbour life as we know it. It is hot enough to melt lead. It is hotter than Mercury which is closest to the sun. According to a senior astronomer who is a member of the Astronomical Society of India, this is because Venus has experienced a runaway greenhouse effect which traps all heat that falls on it. But high up in its atmosphere, there are clouds which can provide a cooler home for microbial life. Even there, the atmosphere is teeming with sulphuric acid vapour which makes it extremely hostile, thereby reducing the chance of finding life forms. According to the expert, the phosphine signature could be the sign of some extraordinary chemistry, as it could be of life forms. The next logical step is to actually do in situ measurements from Venus's atmosphere by sending space probes there.

Have space missions been sent to Venus?

8. There have been several space missions to study Venus, and some of the recent dedicated missions are the European Space Agency's Venus Express and JAXA's Akatsuki. Many space missions have flown by Venus: for example, NASA's Parker Solar Probe used the gravity of Venus to achieve gravity-assisted boosts to its velocity on its journey to the Sun. NASA is planning a mission to Venus to be launched next year. The Indian Venus mission is being developed. Though formally unnamed, it is referred to as Shukrayaan-1.

TOPIC 24. SOLAR CYCLE

1. NASA and the National Oceanic and Atmospheric Administration (NOAA) on Tuesday jointly released a consensus statement announcing the commencement of solar cycle 25. As the star governing our solar system, Sun's activities impact Earth and the overall space weather. *The Indian Express* explains how solar cycles are determined, and how they sometimes indicate a 'quiet' Sun.

What is a solar cycle?

2. Like seasons on Earth, the Sun follows a cycle of 11 years, during which solar activities fluctuate between solar minima and maxima. Depending on the number of sunspots detected on the Sun, scientists term it as solar maxima (highest number of sunspots) or solar minima (lowest number of sunspots). Sunspots are small and dark, yet cooler areas formed on the solar surface, where there are strong magnetic forces. They start appearing at Sun's higher latitudes and later shift towards the equator as a cycle progresses. In short, when the Sun is active, there are more sunspots in comparison to fewer sunspots during the lesser active phase. Maxima or minima is not a specific time in the 11-year cycle, but is a period that can last for a few years.

How are solar cycles determined?

3. One of the important elements researchers look out for on the Sun's surface is the number of sunspots. A new cycle commences when the Sun has reached its lowest possible minima phase. Every time the cycle changes, the Sun's magnetic poles reverse. Since the Sun is a highly variable star, data of sunspot formation and its progress need close monitoring. Data of six to eight months are required to confirm whether the star has undergone a minima phase. A Solar Cycle Prediction Panel comprising solar physicists, led by NASA and NOAA, along with an international community, release a consensus statement once a decade. The team predicts the number of sunspots, the year or period when the cycle would reach its peak, and maxima and minima after taking into consideration the forecasts from global scientific teams. But the panel does not undertake independent predictions.

4. Traditionally, telescopes were used to record sunspots and recorded data since 1755 is available. With the advance in technology in the recent decades, satellites are also used to make real-time sunspot observations. On this basis, scientists announced the completion of solar cycle 24, which lasted between December 2008 and December 2019. With the Sun's activities having reached its lowest minima between the two cycles, the new solar cycle 25 has now commenced.

How has the transition between solar cycles 24 and 25 been?

5. The Sun's activities were notably lesser during 2019 and early 2020. There were no sunspots for 281 days in 2019 and 181 days in 2020. Since December 2019, the solar activities have slowly picked up, corroborating the beginning of the new cycle. The panel termed solar cycle 25 to be a weak one, with the intensity similar to that of Solar cycle 24.

6. "Just because it is a below-average cycle, it does not mean that there is no risk of extreme space weather. Violent solar eruptions can occur at any time," said Doug Biesecker, panel co-chair and solar physicist at NOAA's Space Weather Prediction Centre, Colorado.

7. The transition between the two cycles has been an unusual one, said physicist Dibyendu Nandi from IISER, Kolkata, who said cycle 25 has begun with a 'hesitant' start. Generally, during the transition phase, it is common for sunspots from the two consecutive cycles to overlap with each other. At times, there are no sunspots for longer days at a stretch, suggesting a 'quiet' Sun, said Nandi.

8. So, between cycles 24 and 25, there reached a point when the number of sunspots dived to 1.8, which lasted for a considerably longer time, meaning a 'deep minima'.

9. "Initially, at the transition, new sunspots started appearing but it later stopped. This trend has continued. It is now triggering some concern among scientists," said Nandi, whose team noted the start of solar cycle 25 in February this year.

10. Being the weakest in a century, solar cycle 24 was the fourth smallest in intensity since 1755. At its peak in April 2014, the highest number of sunspots observed were 114, whereas the average number is 179. The forecast suggests that solar cycle 25 would peak in July 2025 and the number of sunspots would be around 115.

What solar activities affect us on Earth?

11. Solar activities include solar flares, solar energetic particles, high-speed solar wind and Coronal Mass Ejections (CME). These influence the space weather which originates from the Sun. Solar storms or flares can typically affect space-dependent operations like Global Positioning Systems (GPS), radio and satellite communications, besides hampering flight operations, power grids and space exploration programmes.

- 12.“Just like one checks the local weather before heading on a vacation, it is imperative to know the space weather. This will enable us to remain prepared, predict and plan mitigation measures ahead of space explorations, so as to build suitable hardware and critical systems,” noted Jake Bleacher, chief scientist at Human Exploration and Operations Mission Directorate, NASA.
- 13.CMEs pose danger to space weather. Ejections travelling at a speed of 500km/second are common during solar peaks and create disturbances in Earth’s magnetosphere, the protective shield surrounding the planet. At the time of spacewalks, astronauts face a great health risk posed by exposure to solar radiation outside Earth’s protective atmosphere. Such advance predictions are regularly sought out by countries who have made heavy investments in space missions. Besides, the life of functional satellites, and even those which have now turned into debris, depends a lot on the Sun’s activities.
- 14.On Tuesday, scientists from NASA and the National Oceanic and Atmospheric Administration (NOAA) announced their predictions about the new solar cycle, called Solar Cycle 25, which they believe has begun. Solar cycles have implications for life and technology on Earth as well as astronauts in space.

What is a solar cycle?

- 15.Since the Sun’s surface is a very active space, electrically charged gases on its surface generate areas of powerful magnetic forces, which are called magnetic fields. Since the gases on the Sun’s surface are constantly moving, these magnetic fields can get stretched, twisted and tangled creating motion on the surface, which is referred to as solar activity. Solar activity varied with the stages of the solar cycle, which lasts on average for a period of 11 years.

How do scientists track solar activity?

- 16.Scientists track a solar cycle by using sunspots, which are the dark blotches on the Sun that are associated with solar activity. Sunspots are associated as the origins for giant explosions such as solar flares that can spew light, energy and solar material into space.

What are sunspots?

- 17.A Sunspot is an area on the Sun that appears dark on the surface and is relatively cooler than the surrounding parts. These spots, some as large as 50,000 km in diameter, are the visible markers of the Sun’s magnetic field, which forms a blanket that protects the solar system from harmful cosmic radiation. When a Sunspot reaches up to 50,000 km in diameter, it may release a huge amount of energy that can lead to solar flares.
- 18.The beginning of a solar cycle is typically characterised by only a few sunspots and is therefore referred to as a solar minimum. On Tuesday, the experts announced that the solar minimum for Solar Cycle 25 occurred in December 2019. It took time for them to announce this because of the variability of the Sun.
- 19.Scientists predict a solar maximum (middle of the solar cycle) will be reached by July 2025 and that this solar cycle will be as strong as the last solar cycle, which was a “below-average cycle” but not without risks.

Why do scientists track solar activity?

- 20.Scientists track solar activity because it can have effects on Earth. For example, when charged particles from coronal mass ejections (CMEs) reach areas near the Earth, they can trigger intense lightning in the skies referred to as auroras. When CMEs are particularly strong, they can also interfere with the power grids, which can cause electricity shortages and power outages. NASA notes that solar flares and CMEs are the most powerful explosions in our solar system.
- 21.Further, solar flares can have a major effect on radio communications, Global Positioning Systems (GPS) connectivity, power grids, and satellites. Last month, spaceweather.com reported observing a massive Sunspot group, AR2770, which emitted a few minor solar flares
- 22.In 1967, a major solar flare almost led to a nuclear war during the Cold War, as per a space.com report. In May that year, the US Air Force’s Ballistic Missile Early Warning System radar sites in Alaska, Greenland and the UK got jammed due to the flare, causing US officials to mistakenly hold the Soviet Union responsible for the radar failures. It was only after scientists at the North American Aerospace Defense Command (NORAD) informed US leaders of the solar flare that the matter deescalated.
- 23.Recently, scientists have developed a new model that can successfully predict seven of the Sun’s biggest flares from the last solar cycle, out of a set of nine with the help of NASA’s Solar Dynamics Observatory.

TOPIC 25. PHASE-3 OF VACCINE TRIAL

The story so far:

1. On Saturday, the University of Oxford and AstraZeneca said they were resuming clinical trials for a new coronavirus vaccine across all U.K. sites. On Tuesday, the U.K.-based biopharma company AstraZeneca had said it was suspending the Phase-3 global trial of AZD1222, the COVID-19 vaccine it has been developing with Oxford University researchers. The vaccine, by all accounts, was among the handful that had reached the final but most daunting stage of trials and is slated to be available commercially by mid-2021. The pause was announced after a volunteer in Britain fell ill. On September 12, Oxford University and AstraZeneca in separate releases said the independent review process had concluded and following a nod from the regulator, trials would resume in the U.K. There was no word in the releases about resumption of global trials or details of the volunteer's illness.

How are vaccine and drugs tested in trials?

2. There are similarities and differences in the way new drugs and vaccines are tested. Broadly both follow a four-stage process when they are tested in people. After a drug has proven itself safe in a variety of animals — usually mice, rabbits, hamsters and primates that mirror human physiology and the way it reacts to diseases — it enters Phase-1 studies. A small group of volunteers is given the drug in small doses and monitored to see if it is safe and whether it was well tolerated. This is also when any occurrences of side effects are closely monitored. On an average, 10-50 candidates are chosen. In the normal course, those undergoing the trial must report results to the drug regulator which gives the go-ahead for the next stage of trials. Phase-2 is when a group of volunteers, usually in the hundreds, are selected. This is the stage when researchers try to determine what dosage would be necessary for it to take effect or produce the desired response. In the case of the COVID-19 vaccine, this is the stage when it's determined if the inoculation had triggered a desired level of antibodies and a sufficient cell response in terms of stimulating T-cells that are known to block and neutralise the virus particles respectively. Again, side effects and adverse reactions are monitored and reported.

What is different about Phase-3 part of the trial?

3. Each of these stages can take several months and that includes the time taken to recruit patients as well as the time involved in observing the effects of drugs and vaccines at various intervals of time. Such data is again sent to regulators, who, if satisfied, give the green signal for Phase-3. In this stage, the drug or vaccine is tested at multiple locations in thousands of volunteers or patients. In the case of a drug, this is the stage when a new drug is compared to the existing standard of care and when it must prove that it is either more efficacious, or is of similar potency but is safer, better tolerable or delivers any of the goods that the drugmakers had claimed when making the drug. In the case of a vaccine for a new disease, there is usually nothing to compare it to, so Phase-3 becomes a larger version of the Phase-2 trial. A Phase-3 trial is held at multiple locations to capture the demographic variability in the population. It is also double-blinded and randomised and may have multiple treatment arms, meaning some participants may get a placebo, some may get lower doses, some higher doses, and in an ideal trial, neither the doctor nor the recipient knows who is getting the drug and who the placebo. When the scale and scope of a trial increases and a diverse population group is exposed to a new vaccine, the odds of encountering adverse and the dreaded 'severe adverse reaction' are magnified. When severe reactions are manifested, medical researchers have to determine if the reaction was due to the drug and if a pattern is apparent, a drug or vaccine can be pulled out. Because of the multiple locations and the number of patients that are required, this is also the most expensive stage of a trial. Sometimes, phases are combined, given the kind of drug or vaccine and the urgency of the situation. Several COVID-19 vaccines are being developed on accelerated time lines.

What happened in the case of AstraZeneca?

4. For the vaccine candidate, called AZD1222 for now, the company had begun recruiting 30,000 volunteers for Phase-3 trials in the United States. The Pune-based Serum Institute of India, which had been contracted to manufacture a hundred million doses for 92 countries including India, had also started to test the vaccine on a proposed group of 1,600 volunteers in India. However, it emerged that

a recipient of the vaccine in the United Kingdom contracted transverse myelitis, an inflammation of the spinal cord, and this led AstraZeneca to pause its trials. Suspension of vaccine trials is not out of the ordinary but Serum Institute initially said it would not halt the India trial because no adverse reactions had been reported here. However, after a show-cause notice from the regulator, the Drugs Controller-General of India, the company said it would halt recruitment of volunteers until AstraZeneca finishes evaluation of the safety data.

What has the independent review said?

5. According to a release from Oxford University, the independent review process has concluded and following the recommendations of both the independent safety review committee and the U.K. regulator, the MHRA (the Medicines and Healthcare products Regulatory Agency), trials will restart in the U.K. "We are committed to the safety of our participants and the highest standards of conduct in our studies and will continue to monitor safety closely," the release said.

What happens in Phase-4?

6. A drug or vaccine candidate that clears Phase-3 is usually approved and licensed and the entire infrastructure of the company is devoted to ramping up production and working out the logistics of storing the drug or vaccine safely without it degrading or losing potency. Once the product goes out into the field, there is post-marketing surveillance, or a Phase-4, where all instances of the product's failure and adverse events are recorded. Companies are expected to furnish periodic data to the drug regulator.



TOPIC 26. RE-INFECTION

The story so far:

1. While the fear of COVID-19 re-infection has dogged discussion on the novel coronavirus, it was in late August that the first ‘confirmed’ case of re-infection was officially recorded. A 33-year-old Chinese male from Hong Kong reportedly caught his second infection during a trip to Europe, four-and-a-half months after he first tested positive for COVID-19. Post-testing, genomic sequencing made it clear that the first and second infection involved variants of the SARS-CoV-2 virus. This seemed to rule out viral shedding or continuing infection from the first time. Subsequently, a case of re-infection in Nevada, U.S., was also similarly revelatory, thanks to viral genome sequencing.

Are these isolated cases?

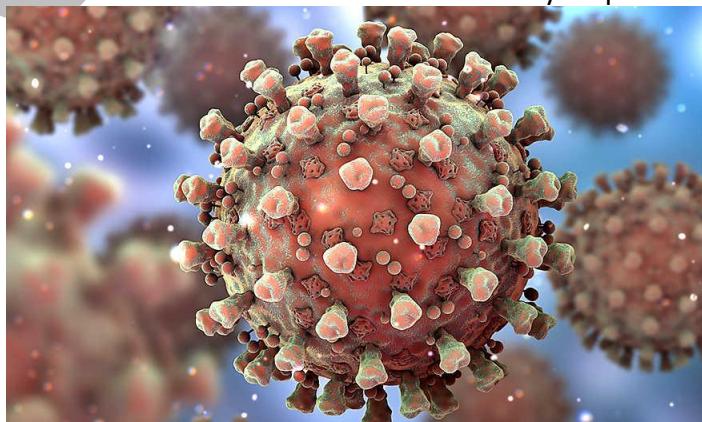
2. While there is no doubt this finding is significant, scientists are still debating whether this comprises an isolated few cases or portends a larger batch of infections as world opens up and global travel begins again. Questions about waning immunity and the viability of a vaccine itself are still not settled either.

What is immunity and how does it work?

3. What discussion intrinsically hinges on is the ability of the human body to fight pathogens harmful to it, and whether in COVID-19 immunity wanes a few months after infection. The human body’s immunity acts in two forms — as innate, jumping to the task of protection immediately, and adaptive, meaning immunity acquired by the body in the process of surviving infection by pathogens, essentially over a period of time.
4. In a piece in The New York Times, Yale immunologists Akiko Iwasaki and Ruslan Medzhitov explain that the adaptive immune system consists of two types of white blood cells, called T and B cells, that detect molecular details specific to the virus and, based on that, mount a targeted response to it. “T cells detect and kill those infected cells. B cells make antibodies, a kind of protein that binds to the viral particles and blocks them from entering our cells; this prevents the replication of the virus and stops the infection in its tracks.”
5. T and B cells retain this memory and help body fight infection later. “Yet it is also the case that with other viruses amount of antibodies in blood peaks during an infection and drops after infection has cleared, often within a few months: This is a fact that has some people worried about COVID-19, but it doesn’t mean what it might seem,” they add. “It’s a normal step in the usual course of an immune response. Nor does a waning antibody count mean waning immunity: The memory B cells that first produced those antibodies are still around, and standing ready to churn out new batches of antibodies on demand.”

What does it mean for the future?

6. Reacting to the Hong Kong case, Maria Van Kerkhove of the WHO said at a briefing: “There’s been more than 24 million cases reported to date... we need to look at something like this at a population level.” Researchers who studied the Hong Kong case themselves said in a publication in Clinical Infectious Diseases : “Our results suggest SARS-CoV-2 may continue to circulate among the human populations despite herd immunity due to natural infection or vaccination. Further studies of patients with re-infection will shed light on protective correlates important for vaccine design.” On its website, the WHO says it will continue to review the evidence on antibody responses to SARS-CoV-2.



TOPIC 27. COVID-19 VACCINE

- Coronavirus (COVID-19) vaccine:** Nearly nine months into the novel coronavirus pandemic, there is a global race to develop a vaccine to control the transmission of the disease. There are 182 vaccine candidates in pre-clinical or clinical trials across the world. Of these, 36 are in clinical trials and nine in final stages of human trials. In India, there are at least eight candidates being developed, two of which have entered phase II trials.
- The most talked about vaccines are being developed by AstraZeneca in partnership with Oxford University; Pfizer and BioNTech; Johnson and Johnson; Sanofi along with GlaxoSmithKline; and Novavax. Gamaleya Institute in the Russian city of Moscow has already developed a vaccine that is being administered to its population. Similarly, there are three vaccines that have been approved for use in China; one of these has been given emergency authorisation in the United Arab Emirates.

EXPRESS
explained.

CORONAVIRUS VACCINE TRACKER



When are COVID-19 vaccines likely to be available?

The expected timeline for the availability of a coronavirus vaccine seems to have advanced from early next year to this year end. Though none of the keenly-awaited vaccines are ready, here are the ones likely to appear first:

#QUIXPLAINED

1

EXPRESS
explained.



Pfizer/BioNTech

Currently Phase-III trials are on in the US. The company expects to know how effective its vaccine is going to be by the end of October. It hopes to apply for emergency authorisation immediately afterwards. If it gets approved, Pfizer could be the first vaccine to become available, at least in the US

Expected Availability: November or December

#QUIXPLAINED

EXPRESS
explained.

Moderna

Currently undergoing Phase-III trials, the company expects to get effectiveness data by December, after which it will seek emergency authorisation.

Expected Availability:

December or January 2021



AstraZeneca/Oxford University

Its Phase-III trials in the US remain halted, after one of the trial participants in the UK developed severe illnesses. Trials have resumed in England and India

Expected Availability:

Early next year



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2

Chinese and Russian vaccines

Three Chinese and one Russian vaccine are already in use. None of these have completed Phase-III trials. One of the Chinese vaccines has been approved for emergency use in UAE as well

Besides these, more than 25 vaccine candidates are currently under clinical trials

#QUIXPLAINED

The Indian Scene

- Serum Institute will bring the Oxford/AstraZeneca vaccine. Combined Phase-II and Phase-III trials currently underway



- Serum will also bring a vaccine being developed by US pharma company Novavax, currently undergoing Phase-II trials in South Africa. Phase-III is scheduled to start in October. In India, late stage trials expected to begin in November

- Dr Reddy's Laboratories will bring the Russian vaccine. Trial dates not yet announced. Russian developer is also looking for an Indian partner to manufacture the vaccine

#QUIXPLAINED

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- Hyderabad-based Biological E to bring the vaccine being developed by Johnson & Johnson. Currently, combined Phases I and II are on. Phase-III expected to start in October

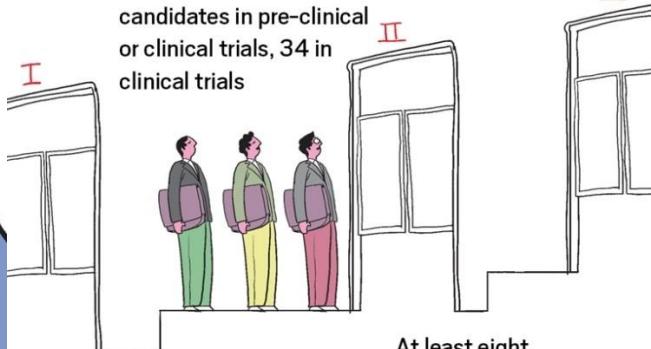
- Two Indian candidates, by Bharat Biotech and Zydus Cadila, currently in Phase-II trials

Earliest availability: Russian vaccine might become the first available. The next could be the one by Oxford University/ AstraZeneca

#QUIXPLAINED

THE CORONAVIRUS VACCINE STORY SO FAR

More than 175 vaccine candidates in pre-clinical or clinical trials, 34 in clinical trials



Eight in final stages, Phase-III of human trials



At least eight candidate vaccines are being developed in India. Two of these have entered Phase-II trials after completing Phase-I

#QUIXPLAINED

TEXT: AMITABH SINHA; ILLUSTRATION: SUVAJIT DEY

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TOPIC 28. INTERNET CONNECTION

- As the monsoon begins to officially retreat, many in India will be looking forward to some relief from a phenomenon that they have come to expect whenever it rains: Internet connections become unstable, and cell phone networks deteriorate. Why does this happen?
- In the 1860s, the Scottish physicist James Maxwell predicted the existence of a new kind of ‘electromagnetic’ waves that travel at a speed of ~300 million metres/second. A couple of decades on, Heinrich Hertz experimentally verified Maxwell’s theory and, in 1895, Sir Jagadish Chandra Bose demonstrated for the first time wireless communication with electromagnetic waves over a distance of 23 metres in Calcutta, establishing the foundation of a modern system of communication.
- To understand how we communicate or send messages today via the Internet across continents – and then how this communication is disrupted – we first need to understand the fundamental nature of electrical force.

Electrons in communication

- There are three fundamental building blocks, or ‘Lego bricks’ that nature uses to make all matter – two kinds of quarks, and the electron. For our purposes, we need to discuss only the electron.
- All matter consists of many, many electrons. Like the other Lego bricks, electrons have a property called mass, which indicates how strongly the gravitational force acts on them, and is therefore directly related to their weight.
- Another property of electrons called electric charge indicates how strongly the electrical force acts on them. The electron’s charge also decides the strength of the electrical force they apply on other objects that, too, have a charge (like the two other Lego bricks, for instance). This force, like the force of gravity, acts at a distance. So, two electrons separated by a long distance apply electrical forces without ever making contact. Since an electron is charged, the space around it is filled with an electric field.
- If you imagine that an electron lives in an ocean it creates, you can, if you wiggle the electron, initiate a wave in this ocean. This is similar to throwing a stone in a still pond, which creates ripples that travel away from it. When this wave passes by another electron that happens to be in our electron’s ocean, this other electron will bounce up and down – as you might when an ocean wave washes over you.
- This is how we communicate. An electromagnetic wave is initiated at some location by wiggling electrons, which then washes over electrons at some distant location. The word ‘signal’ specifically means electromagnetic waves. The electrons in your eyes can also respond to these waves, provided the wavelength – the distance between peaks in the wave – is within a specific range. In this particular wavelength range, electromagnetic waves are visible to us; they are light! The most basic form of long-distance communication – flashing a bright light and using Morse Code – uses the transfer of electromagnetic waves from one location to another.

Optical fibres & the rain

- These concepts equip us to understand the only mode of communication that matters anymore, the Internet. This is essentially a vast network of computers across the world that can transfer electromagnetic waves to each other, and therefore communicate.
- There are two primary ways to transport waves — by optical fibre, and cellular towers (via satellite link). Optical fibres are long, thin glass rods of thickness less than human hair. Light is confined in the rod due to the phenomenon of total internal reflection. When light travelling from a denser medium to a less dense one (for instance, from glass to air) hits the surface between two transparent media at a critical angle, it is entirely reflected back into the denser medium. This way, electromagnetic waves are trapped inside the fibre, and travel down the length of it. Splicing or joining hundreds of thousands of kilometres of fibres together, and burying them underground or undersea, allows communication across the globe. The electromagnetic waves used for communication (infrared waves) are generated by lasers, and have a slightly longer wavelength than visible light, so they are invisible to us.
- The optical fibre network in India was initiated by VSNL, and is currently owned and developed by Tata Communications. All Internet Service Providers connect in some way to this ‘Tier 1’ network, and

eventually to your home. These secondary connections are not necessarily optical, and involve several electrical components. (Note: Electrical cables transfer electrons rather than electromagnetic waves, but that's a topic for another day!) Electrical components are also required along the entire optical fibre network to amplify and switch the light on and off for digital communications.

12. Monsoon rain might interrupt this subterranean network in many ways. The combination of water seeping into the ground and landslides can damage the various electric components in the network, or cause physical damage at locations where the fibres are spliced together.

13. There can also be similar damage, or power outages at intermediate locations, where your local service provider connects to the Tier 1 optical network, and then to your home. The fibre has a core, cladding, and plastic protective coating and is held in a watertight protective enclosure, so the signal transmission is least affected by rain. The coating is removed while joining two fibres. At locations where fibres begin or end (known as 'splice boxes') there is a possibility of fibres being exposed to rain water, causing a reduction in signal strength. Additionally, water molecules may find a way via micro cracks in the fibres, eventually affecting the life of the fibre.

Cell phones in the rain

14. When your cell phone is connected to the Internet, electromagnetic waves travel from your device through the air to a cell tower. You could think of this as a giant antenna. The electrons in this antenna bounce up and down. When they do this, they produce their own electromagnetic waves, which travel to a central location managed by your service provider. At this location, the waves get 'processed' in some way, and are sent either to the optical fibre network (the Internet) or another phone (phone call, text message, etc.).

15. There are various kinds of processing that might occur. For instance, one important difference between the electromagnetic waves emitted from your phone and those from the laser that travels in the optical fibre is the wavelength. The radio waves emitted from, and received by your phone, are approximately a metre long. In contrast, the infrared waves that travel through the fibre network are approximately a millionth of a metre in length. Note that neither of these wavelengths affects the electrons in your eye, since they are not visible wavelengths (around 500 billionths of a metre long).

16. Somehow, the message from your phone needs to be 'translated' from radio to infrared waves. If you were using Morse Code, you might imagine that the radio waves detected by your provider flash on and off, containing your message. The laser managed by your provider needs to be made to produce the same sequence of flashes that travel through the fibre network.

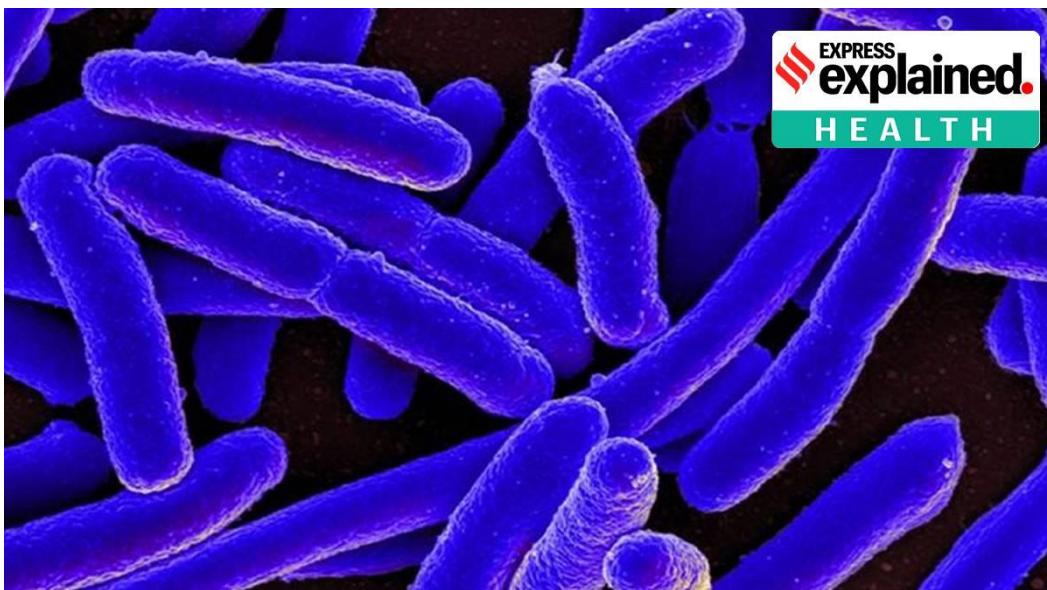
17. The reasons for interruption in this communication chain during the monsoon are different compared to the optical fibre network.

18. The radio waves travelling between your phone and the cell tower can make electrons in water drops wiggle, interrupting communication. The size and number of rain drops reduce the signal strength due to the scattering of the radio waves, while water vapour in the atmosphere absorbs the radio waves, converting them to heat (like in your microwave oven).

19. Further, heavy monsoon rain, wind, and lightning can cause damage to cell towers, resulting in interruptions in the area they cover. Note that this is also why you find yourself without any signal in some areas – there is no cell tower nearby. But perhaps the most common cause of interruption is 'jamming'. When too many people try to communicate through signal processing locations at the same time, some messages get lost.

20. Getting that favourite meme from its author's computer to yours is, therefore, an effort that involves electromagnetic waves travelling many thousands of kilometres. It is an extraordinary achievement of modern science, and it would seem amazing that it works at all! Perhaps this can ease your frustration somewhat the next time your Internet goes off during a rainstorm!

TOPIC 29. BRUCELLOSIS BACTERIAL DISEASE



- As the novel coronavirus pandemic continues, the health commission of Lanzhou City in China announced this week that a leak in a biopharmaceutical company last year caused an outbreak of brucellosis disease. More than 3,000 people have been infected with the disease since and no fatalities have been reported so far.

What is brucellosis?

- Brucellosis is a bacterial disease that mainly infects cattle, swine, goats, sheep and dogs. Humans can get infected if they come in direct contact with infected animals or by eating or drinking contaminated animal products or by inhaling airborne agents. According to the WHO, most cases of the disease are caused by ingesting unpasteurised milk or cheese from infected goats or sheep.
- Symptoms of the disease include fever, sweats, malaise, anorexia, headache and muscle pain. While some signs and symptoms can last for long periods of time, others may never go away. These include recurrent fevers, arthritis, swelling of the testicles and scrotum area, swelling of the heart, neurologic symptoms, chronic fatigue, depression and swelling of the liver or spleen.
- Human to human transmission of the virus is rare.

When did the current outbreak begin?

- The website of the health commission of Lanzhou City mentions a “Brucells antibody-positive incident” that occurred at the Lanzhou Veterinary Research Institute on November 28 last year. While in the process of producing a veterinary vaccine for the disease between July 24 and August 20, 2019, the factory used expired disinfectants that caused incomplete sterilisation of waste gas. This waste gas, which was carrying the disease-causing virus, subsequently formed aerosols as a result of which people were exposed.
- Other disease outbreaks since COVID-19
- Hantavirus:** In March, China's English daily Global Times reported the death of a person from Yunnan Province who tested positive for the hantavirus. The hantavirus is not novel and its first case dates back to 1993, according to the US Centers for Disease Control (CDC). It is contracted by humans from infected rodents.
- African Swine Fever (AFS):** Amid the COVID-19 lockdown, an outbreak of ASF killed thousands of pigs in Assam and Arunachal Pradesh. ASF is a severe viral disease that affects wild and domestic pigs typically resulting in an acute haemorrhagic fever. The disease has a case fatality rate (CFR) of almost 100 per cent. Its routes of transmission include direct contact with an infected or wild pig (alive or dead), indirect contact through ingestion of contaminated material such as food waste, feed or garbage, or through biological vectors such as ticks.

TOPIC 30. SPUTNIK V

The story so far:

1. On September 16, Hyderabad-based Dr. Reddy's Laboratories announced that it had signed an agreement with the Russian Direct Investment Fund (RDIF) to conduct large human trials (Phase-3) of Sputnik V. A candidate vaccine for COVID-19, it has been developed by Russia's Gamaleya Research Institute and piloted by the RDIF, the country's sovereign wealth fund. If these trials are successful and the vaccine is proved to be safe, Russia has committed itself to supplying 100 million doses to India through Dr. Reddy's.

What do we know about Sputnik V?

2. Much like the launch of the Sputnik-1 satellite in 1957 heralded the Space Age, Russia claims the vaccine candidate will "reinvigorate" vaccine development and a potential solution to the coronavirus pandemic. Sputnik V is being developed as a two-dose vaccine using two human recombinant adenovirus vectors — rAd5 and rAd26 — known to cause respiratory infections. These vectors have been modified to not replicate in the body. These inactivated vectors are also tweaked to carry the 'S gene' that encodes the 'spike protein' of the coronavirus. The hope is that these vectors will inveigle themselves into a small number of the body's cells, trick the body into registering the coronavirus' spike protein and thus activate the immune system into producing specialised 'T' cells that can neutralise the affected cells. Once this happens the immune system is expected to produce antibodies as well as 'memory B cells', which can produce the right offensive cells when needed to neutralise future SARS-CoV-2 infections the body may encounter.

Is this a proven approach?

3. There have been several experimental vaccines and drugs that use human adenovirus vectors but none has been commercially approved for use in people. Sputnik V is also a two-dose regimen, meaning that individual shots are dispensed three weeks apart. The argument is that the second dose acts as a booster shot and Gamaleya has said the use of two vectors is what differentiates the Russian vaccine from the other adenovirus-based approaches. CanSino Biologics of China and the vaccine being developed by Oxford University (ChAdOx1) are also based on adenovirus platforms, except that the Oxford candidate uses an adenovirus vector that is known to infect chimpanzees.

What are the key challenges?

4. The challenge with using human adenoviruses is that because they commonly infect people, many have pre-existing immunity to the virus and so antibodies may block the vector even before it infiltrates cells and synthesises proteins that can specifically induce immune cells specific to the coronavirus. The rAd5 has been previously used to produce vaccines as well as drugs against other diseases including HIV, but that didn't work. CanSino Biologics used the same vector to make a vaccine against the Ebola virus during an outbreak in West Africa. The vaccine was tested in people but wasn't licensed, though it reportedly induced a short-term antibody response in those who were inoculated. Researchers suggested that the pre-existing rAd5 immunity in people may have blunted the response. An adenovirus-based vaccine has been commercially licensed for rabies. The second vector being used by Sputnik V, rAd26, is a rarer adenovirus and is devised to work as a backup or a booster to stimulate a stronger response. The risks are that too strong a response may cause severe adverse reactions.

Has Russia started large trials of Sputnik V?

5. Earlier this month, Russia said it had begun testing the vaccine in the country among 40,000 volunteers as part of its large Phase-3 trials. Experience from Phase-1 and Phase-2 in a smaller group of volunteers and designed to test for safety and efficacy suggested that it was promising enough to progress onto the larger trials. The most controversial aspect of Sputnik V is that it has already been preapproved by the country's health agency even before Phase-1 and 2 trial results were published. According to health experts, this indicated that speed, and not safety, was being prioritised. Pharmaceutical companies in the U.S. and Europe have pledged not to approach regulators before Phase-3 trials concluded. As of Saturday, there were no details of how Dr. Reddy's planned to go about conducting the trials in India.

TOPIC 31. LONG-TERM EFFECTS OF COVID-19

The story so far:

1. Surviving COVID-19 has been only part of the triumph for some patients. While doctors were well aware of the impact of lasting viral infections, the first few months of the pandemic were devoted to preventing transmission and figuring out how to take care of those in hospitals, and not much attention was paid to the after-effects. But over eight months into the epidemic, these can no longer be ignored. Though SARS-CoV-2 is essentially a virus that hits the lungs, in a smaller subset, it also seems to have an impact on the lungs, heart and brain, increasing the risk of long-term health issues, and life-threatening complications.

What kinds of complications may occur?

2. Gregory Poland, of the Vaccine Research Group, Mayo Clinic, U.S., says: "This is a disease that has a number of mysteries involved, compared to the usual respiratory virus... there is diminution of immunity, long-term fatigue, headaches, vertigo, difficulty with cognition, and cardio-respiratory fitness. But a large portion of that is likely to relate to the significant cellular level damage this disease can cause... This can be a really wicked virus in some people."

3. Among the more common lingering symptoms are fatigue, cough, shortness of breath, headache, muscle and joint pain. In Chennai, doctors who had recovered from COVID-19 to return to work complained of chronic fatigue, besides myalgia (muscle pain) and weakness.

4. The Mayo Clinic lists organs that may be affected by COVID-19: Heart: imaging tests taken months after recovery show lasting damage to the heart muscle, even in those with only mild symptoms, increasing the risk of heart failure or other heart complications; Lungs: long-standing damage to the air sacs inside the lungs, leading to long-term breathing problems; Brain: strokes, seizures and Guillain-Barre syndrome that causes temporary paralysis. An increased risk of developing Parkinson's and Alzheimer's disease is possible; Blood: blood cells are more likely to clump up and form clots. While large clots can cause heart attacks and strokes, much of the heart damage caused by COVID-19 is believed to stem from very small clots that block capillaries in the heart muscle. Blood throwing such clots can affect other organs as well — the lungs, legs, liver, kidneys; Mood disorders: simply surviving this experience can make a person more likely to later develop post-traumatic stress disorder, depression and anxiety.

Does everyone face these side effects?

5. The good news, according to the Mayo Clinic, is that most people who have the novel coronavirus disease recover completely within a few weeks. Only some people, including even those who had mild versions of the disease, continue to experience symptoms after their initial recovery. Even people who tested positive but were asymptomatic during the course of their disease are not immune either from long-term effects. In a letter published in Nature Medicine in June, researchers from China explained that CT scans done in asymptomatic people revealed abnormal radiological findings in one lung in 66.7% of the asymptomatic people and abnormalities in both lungs in 33.3% of them. While it is said that senior citizens and people with co-morbidities are more likely to suffer long-term effects, even children and the young who had milder versions of the disease are reporting persistent symptoms. The WHO mentions a telephone survey of symptomatic adults who had a positive outpatient test result for SARS-CoV-2: 35% had not returned to their usual state of health when interviewed 2–3 weeks after testing. Among those 18–34 years in good health, 20% reported that some symptoms were prolonged.

What are the solutions?

6. Countries across the world are beginning to realise the importance of assessing the long-term impact, and exploring solutions to rectify damage. The U.K.'s PHOSP(post-hospitalisation)-COVID project is one of several such projects globally to study patients who have been hospitalised with COVID-19. Over the course of a year, clinical assessments will track 10,000 patients to gain a comprehensive picture of the impact COVID-19 has had on longer-term health outcomes. The team will then develop trials of new strategies for clinical care to improve long-term health.

TOPIC 32. MSP

1958 | The National Agricultural Cooperative Marketing Federation of India Ltd (NAFED) is established to promote co-operative marketing of agricultural produce

1950s and 1960s | Heavy reliance on PL 480 – American food aid

Mid-1960s | Severe droughts cause acute food shortage and heavy reliance on food aid

1965 | The Agricultural Prices Commission (APC) is formed to recommend minimum support prices (MSPs) to incentivize cultivators to adopt modern technology and raise productivity. Initially, the scheme covers 11 crops

1965 | The Food Corporation of India (FCI) comes into existence. FCI is to determine

the floor price by procuring grain at MSP whenever market prices fall below it

1985 | NAFED gets mandate to provide price support operations for pulses and oilseeds. The APC is renamed the Commission on Agricultural Costs and Prices (CACP)

2004 | National Commission on Farmers (NCF) constituted under MS Swaminathan recommends that the MSP should be 50% higher than the average cost of production

2015 | Central government tells the Supreme Court that it will not be able to implement this recommendation

2017 | Demand for implementation of the recommendation is one of the issues raised in on-going farmer protests

2 THE MSP FIXATION PROCESS

Step-1: The Directorate of Economics and Statistics (DES) under the Agricultural Ministry is the body responsible for collecting primary data

Step-2: This data is used for estimation of cost of cultivation/production and given to CACP. The cost projections done by CACP are typically based on actual cost data, which is at least two to three years old

Step-3: Cost determination

Cost of cultivation on per hectare basis (CoC) and cost of production on per quintal basis (CoP) are estimated by combining both paid-out costs and imputed costs.

Paid-out Costs—Hired labour (human/animal/machine), maintenance (animal/machines), expenses on inputs (seeds, fertilizers etc), depreciation of farm building, rent paid for leased-in land and so on

Imputed Costs—Family labour, managerial input of family, presumptive rent of owned land

1. The recently enacted law that dismantles the monopoly of APMC (agricultural produce market committee) mandis, thereby allowing sale and purchase of crops outside these state government-regulated market yards, may not have faced serious farmer opposition had it included a provision safeguarding the continuance of the existing minimum support price (MSP)-based procurement regime.
2. A mere sentence, to the effect that nothing in this Act shall stop the government from announcing MSPs and undertaking crop purchases at these rates as before, might have blunted any criticism of the new law being “anti-farmer”.

What does the law say about MSP?

3. The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Bill does not give any statutory backing to MSP. Forget making it a legal right, there isn't even a mention of either “MSP” or “procurement” in the Bill passed by both Houses of Parliament last week.
4. Agriculture Minister Narendra Singh Tomar has said the new legislation **has “nothing to do with MSP”**. Instead, its objective is simply to grant farmers and traders the freedom of choice to sell and buy agricultural produce outside the premises of APMC mandis. MSP and procurement, according to him, are entirely separate issues: “MSP was not part of any law before. Nor is it part of any law today.”
5. The minister isn't wrong.
6. The National Food Security Act, 2013 (NFSA), passed by the previous Congress-led UPA government, provides a legal basis for the public distribution system (PDS) that earlier operated only as a regular government scheme. The NFSA made access to the PDS a right, entitling every person belonging to a “priority household” to receive 5 kg of foodgrains per month at a subsidised price not exceeding Rs

2/kg for wheat and Rs 3/kg for rice. Priority households were further defined so as to cover up to 75% of the country's rural population and 50% in urban areas.

7. MSP, by contrast, is devoid of any legal backing. Access to it, unlike subsidised grains through the PDS, isn't an entitlement for farmers. They cannot demand it as a matter of right.

What is the basis of MSP then?

8. "It is only a government policy that is part of administrative decision-making. The government declares MSPs for crops, but there's no law mandating their implementation," explained Abhijit Sen, former Planning Commission member and chairman of the Commission for Agricultural Costs & Prices (CACP).
9. The Centre currently fixes MSPs for 23 farm commodities — 7 cereals (paddy, wheat, maize, bajra, jowar, ragi and barley), 5 pulses (chana, arhar/tur, urad, moong and masur), 7 oilseeds (rapeseed-mustard, groundnut, soyabean, sunflower, sesamum, safflower and nigerseed) and 4 commercial crops (cotton, sugarcane, copra and raw jute) — based on the CACP's recommendations.
10. But the CACP itself is not any statutory body set up through an Act of Parliament. This, despite its coming to existence in 1965 and MSPs being announced since the time of the Green Revolution, starting with wheat in 1966-67. The CACP, as its website states, is just "an attached office of the Ministry of Agriculture and Farmers Welfare, Government of India". It can recommend MSPs, but the decision on fixing (or even not fixing) and enforcement rests finally with the government.
11. "The government can procure at the MSPs if it wants to. There is no legal compulsion. Nor can it force others (private traders, organised retailers, processors or exporters) to pay," Sen noted. The government does buy wheat and paddy at their MSPs. But that's more out of political compulsion and the need to supply the PDS's foodgrain requirements, more so post the NFSA.
12. The only crop where MSP payment has some statutory element is sugarcane. This is due to its pricing being governed by the Sugarcane (Control) Order, 1966 issued under **the Essential Commodities Act**. That order, in turn, provides for the fixation of a 'fair and remunerative price' (FRP) for cane during every sugar year (October-September). But even the FRP — which, incidentally, was until 2008-09 called the 'statutory minimum price' or SMP — is payable not by the government. The responsibility to make FRP payment to farmers within 14 days of cane purchase lies solely with the sugar mills.

Has there been any move to give MSP legislative backing?

13. The CACP, in its price policy report for the 2018-19 kharif marketing season, had suggested enactment of a legislation conferring on farmers 'The Right to Sell at MSP'. This, it felt, was necessary "to instil confidence among farmers for procurement of their produce". That advice, predictably, wasn't accepted.
14. The **ongoing farmer protests** essentially reflect a loss of that very confidence. Is the dismantling of the monopoly of APMC mandis in wholesale trading of farm produce the first step at ending even the present MSP-based procurement programme, largely limited to wheat and paddy? If APMCs were to turn unviable due to the trades moving outside, how will government agencies undertake procurement that now takes place in mandis?
15. These questions are playing in the minds of farmers, particularly in states such as Punjab, Haryana and MP that have well-established systems of governmental MSP purchases. For them, freedom to sell to anyone, anywhere and anytime has little value compared to the comfort of assured procurement at MSP.

What has the government done to address these questions?

16. Prime Minister Narendra Modi, on September 20, tweeted that the "system of MSP will remain" and "government procurement will continue". The Agriculture Minister, too, has pointed out that past governments never thought it necessary to introduce a law for MSP. So why even talk about MSP, leave alone incorporate guarantees relating to its continuance, in an apparently unrelated law?
17. It remains to be seen whether these finer points would go down well on the ground. By announcing the MSPs of rabi crops for the ensuing planting season on September 21 (this was last year done on October 23) and kickstarting kharif procurement from early next month, the government may hope to counter any major farmer backlash.

TOPIC 33. FARM BILLS

1. Farmers in Punjab and Haryana have been protesting against three farm reform bills
 - a. The Farmers' Produce Trade And Commerce (Promotion And Facilitation) Bill,
 - b. The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Bill, and
 - c. The Essential Commodities (Amendment) Bill
2. Passed by the Parliament in the recently concluded Monsoon session. Last week, Union Minister Harsimrat Kaur Badal, an MP of the Shiromani Akali Dal (SAD), one of the BJP's oldest allies, **resigned from the Narendra Modi Cabinet**, in protest against the bills.
3. While farmers are protesting against all three bills, their objections are mostly against the provisions of the first. And while there is no uniform demand among the protesters or a unified leadership, it emerges that their concerns are mainly about sections relating to "trade area", "trader", "dispute resolution" and "market fee" in the first bill.
4. As many as 31 farmers' organisations, which have different ideologies and leanings, are to fight collectively against these Bills, and the first agenda on their **common programme is the 'Punjab Bandh Call'**, slated for Friday (September 25).



5. Farmers have been protesting against the three Bills in Punjab and Haryana, among other states.
6. The government's push to reform India's agriculture sector has divided opinions and triggered a debate about the state of Indian agriculture. In the context of this debate, two long-standing characteristics of Indian agriculture are noteworthy.
7. One, Indian agriculture is highly unremunerative. Two, it has been heavily regulated by the government and protected from the free play of market forces.
8. According to the government, **the new Bills passed by** Parliament attempt to make it easier for farmers to sell to and produce for the private sector. The hope is that liberalising the sector and allowing greater play for market forces will make Indian agriculture more efficient and more remunerative for the farmers.
9. In this context, it is important to understand some of the basics of Indian agriculture.

Holdings, income & debt

10. At the time of Independence, about **70% of India's workforce** (a little less than 100 million) was employed in the agriculture sector. Even at that time, agriculture and allied activities accounted for around **54% of India's national income**. Over the years, agriculture's contribution to national output declined sharply. As of 2019-20, it was less than 17% (in gross value added terms).
11. And yet, proportion of Indians engaged in agriculture has fallen from 70% to just 55% (**Chart 1**). As Committee on Doubling Farmers' Income (2017) observes, "dependence of rural workforce on agriculture for employment has not declined in proportion to falling contribution of agriculture to GDP".
12. A crucial statistic is proportion of landless labourers (among people engaged in this sector) as it captures growing level of impoverishment. It went up from 28% (27 mn) in 1951 to 55% (144 mn) in 2011.
13. While the number of people dependent on agriculture has been burgeoning over the years, the average size of landholdings has become reduced sharply — even to the extent of being unviable for efficient production. Data shows that 86% of all landholdings in India are small (between 1 and 2 hectares) and marginal (less than 1 hectare — roughly half a football field). The average size among marginal holdings is just 0.37 ha.
14. According to a 2015 study by Ramesh Chand, now a member of Niti Aayog, a plot smaller than 0.63 ha does not provide enough income to stay above the poverty line.

WHAT THE INDIAN FARMER OWNS, OWES AND EARN

CHART 1: THE FARM WORKFORCE

Year	Total engaged in agriculture (% of workforce)	Agricultural labourers (% of agricultural workforce)
1951	69.70%	28.10%
1961	69.50%	69.50%
1971	69.70%	37.80%
1981	60.50%	37.50%
1991	59%	40.30%
2001	58.20%	45.60%
2011	54.60%	54.90%

CHART 2: INDEBTEDNESS BY LANDHOLDINGS (JULY 2012-JUNE 2013)

Land owned (hectare)	Indebted farm household (lakhs)	Average loan amount (Rs)
Upto 0.01	10.02	31100
0.01-0.40	135.97	23900
0.41-1.00	152.16	35400
1.01-2.00	86.11	54800
2.01-4.00	56.10	94900
4.01-10.00	25.21	182700
10 & above	2.92	290300
All India	468.48	47000

CHART 3: INCOME AND INDEBTEDNESS

State	Farm households indebted (%)	Monthly income per household (Rs)
Andhra Pradesh	92.9%	5979
Bihar	42.5%	3558
Punjab	53.2%	18059
West Bengal	51.5%	3980
All India	51.9%	6426

CHART 4: TERMS OF TRADE (FARMER, NON-FARMER)



CHART 5: PROCUREMENT & PRODUCTION, 2018-19

RICE		% Procured at MSP
Punjab	16,050	70.62%
West Bengal	12,820	15.44%
WHEAT		
Punjab	32,750	38.75%
Bihar	18,240	0.10%

CHART 6: MIGRATION OF FARMERS

■ Out-migrants

State	Out-migrants
Uttar Pradesh	1,29,94,674
Bihar	79,49,853
Rajasthan	39,49,277

CHART 7: SHARE OF FOOD PROCESSING GVA IN TOTAL MANUFACTURING GVA (%)

Country	Share
India(2017)	9.7
Indonesia(2018)	35.5
New Zealand(2013)	34.3
USA(2018)	11.4
France(2018)	16.2

Source: Agriculture Statistics at a Glance 2019; Census 2011 (Chart 6); RBI (Chart 7)

15. The combined result of several such inefficiencies is that most Indian farmers are heavily indebted (**Chart 2**).

The data shows that 40% of the 24 lakh households that operate on landholdings smaller than 0.01 ha are indebted. The average amount is Rs 31,000.

16. A good reason why such a high proportion of farmers is so indebted is that Indian agriculture — for the most part — is unremunerative. **Chart 3** provides the monthly income estimates for an agriculture household in four very different states as well as the all-India number.

17. Some of the most populous states like Bihar, West Bengal and Uttar Pradesh have very low levels of income and very high proportions of indebtedness. And even the relatively more prosperous states have fairly high levels of indebtedness.

Buying & selling

18. Another way of understanding the plight of the farmers relative to the rest of the economy is to look at the Terms of Trade between farmers and non-farmers. Terms of Trade is the ratio between the prices paid by the farmers for their inputs and the prices received by the farmers for their output, explained Himanshu, an economics professor at the JNU. As such, 100 is the benchmark. If the ToT is less than 100, it means farmers are worse off. As **Chart 4** shows, ToT rapidly improved between 2004-05 and 2010-11 to breach the 100-mark but since then it has worsened for farmers.

19. A key variable in the debate is the role of minimum support prices. Many protesters fear governments will roll back the system of MSPs. MSP is the price at which the government buys a crop from a farmer. Over the years, MSPs have served several goals. They have nudged farmers towards the production of key crops required for attaining basic self-sufficiency in foodgrains. MSPs provide “guaranteed prices” and an “assured market” to farmers, and save them from price fluctuations. This is crucial because most farmers are not adequately informed.

20. But although MSPs are announced for around 23 crops, actual procurement happens for very few crops such as wheat and rice. Moreover, the percentage of procurement varies sharply across states (Chart 5). As a result, actual market prices — what the farmers get — are often below MSPs.

Other variables

21. These trends of income, indebtedness and procurement are aligned to the inter-state migration. Chart 6 shows the states that witness the most out-migration.

22. Lastly, the government hopes that these reforms, including the relaxations to stocking food articles, will boost the food processing industry. An RBI study (see Chart 7) found that India has a lot of room to grow in this regard, and generate employment and income.

23. On Sunday, **Rajya Sabha passed** two of the **three farm reforms Bills** that have seen widespread protests in recent weeks, particularly in Haryana and Punjab, where the ruling **BJP** has lost its **ally Shiromani Akali Dal**. Prime Minister **Narendra Modi** has reiterated that farmers will benefit from the changes, first mentioned as part of the Atmanirbhar Bharat Abhiyan package. The Bills replaced three ordinances promulgated earlier.

What do the farm Bills do?

24. The first thing to do is to simplify the names of these ordinances as agriculture economist Sudha Narayanan (of the IGIDR) has done.

25. So, think of “The Farmers Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020” as the APMC Bypass Ordinance. Treat “The Essential Commodities (Amendment) Ordinance, 2020” as “The Freedom of Food Stocking by Agribusinesses Ordinance”, and “The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance, 2020” as the Contract Farming Ordinance.

26. On paper, what the first one attempts to do is allow farmers to sell their produce at places other than the APMC-regulated mandis. It is crucial to note that the idea is not to shut down APMCs but to expand a farmer’s choices. So, if a farmer believes a better deal is possible with some other private buyer then he can take that option instead of selling in the APMC mandi.

27. The second Bill proposes to allow economic agents to stock food articles freely without the fear of being prosecuted for hoarding.

28. The third Bill provides a framework for farmers to enter into contract farming — that is signing a written contract with a company to produce what the company wants in return of a healthy remuneration.

29. The idea with all three Bills is to liberalise the farm markets in the hope that doing so will make the system more efficient and allow for better price realisations for all concerned, especially the farmers. The central concern, presumably, is to make Indian farming a more remunerative enterprise than it is right now.

How have they been received?

30. There are two diametrically opposite ways to look at these changes.

31. One is to believe that the plan on paper will operationalise perfectly in real life. This would mean farmers will get out of the clutches of the monopoly of APMC mandis and evade the rent-seeking behaviour of the traditional intermediaries (called arhatiyas). A farmer would be able to pick and choose who to sell to, and at what price, after making an informed decision. And that, most crucially, when he does this, more often than not, he will end up earning more than what he typically did in the past when he sold his produce through the “exploitative” arhatiyas in the APMC mandis.

32. The polar opposite viewpoint, from the protesters, is that this move towards greater play of free markets is a ploy by the government to get away from its traditional role of being the guarantor of minimum support prices (MSPs). To be sure, MSPs work in the formally regulated APMC mandis, and not in private deals.

33. Farmers, especially in Punjab and Haryana where MSPs are more prominently employed, are suspicious of what the markets will offer and how the “big companies” will treat them. Farmers can influence the most powerful governments through the electoral process but vis-a-vis big companies, they are exposed as minor players, incapable of bargaining effectively.

Which view is correct?

34. There are no easy answers apart from saying that while both have some valid points, neither view is fully correct.

35. For instance, the new laws are not shutting down APMC mandis, nor are they implying that MSPs will not be functional. Moreover, it is true that — across several sectors of the economy — liberalisation has expanded the size of the pie and improved wellbeing across the board.

36. Why should a farmer not have more choices? If the private deal is not distinctly better, a farmer can carry on as before. If corporate farming does manage to weaken the APMC mandi system, it would only be because hordes

of farmers chose corporate farming or selling outside existing mandis. Could it be the case that the arhatiyas and existing elites are the ones who are threatened by this reform?

37. Moreover, there is an unwarranted fascination with MSPs in India. The last Agriculture Census (2015-16) showed that 86% of all land holdings were small and marginal (less than 2 hectares); see Chart. These are such small plots that most farmers dependent on them are net buyers of food. As such, when MSPs are raised they tend to hurt the farmers the most.

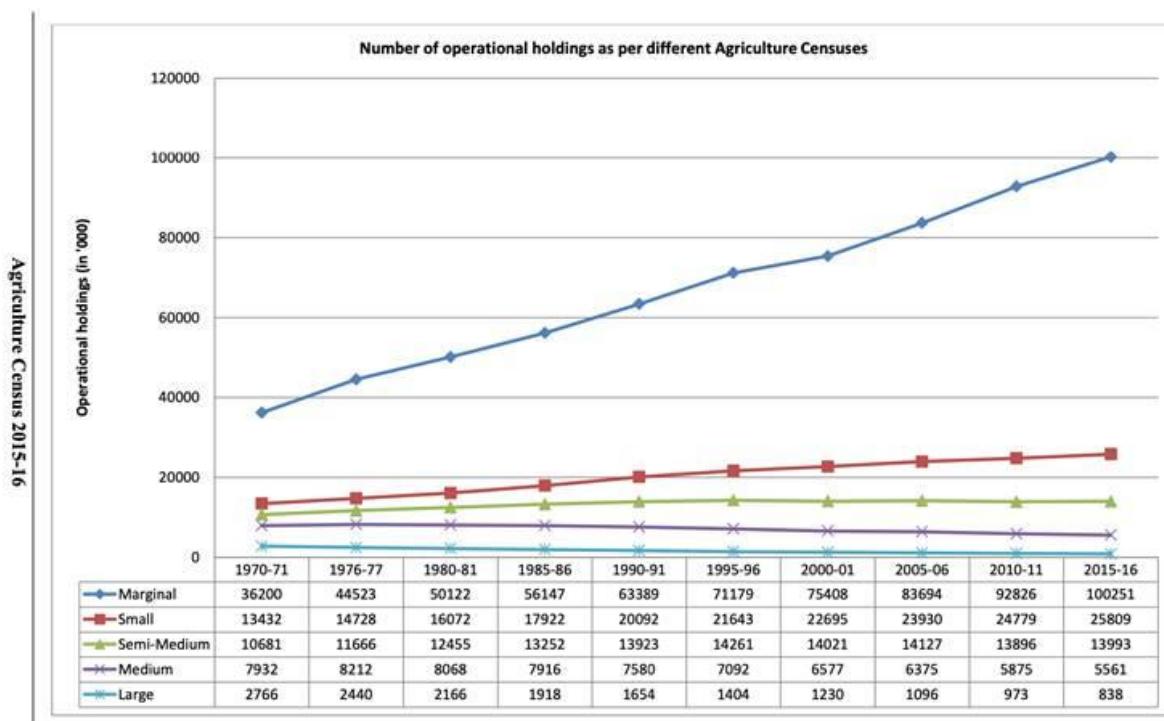


Chart on size of land holdings

38. This is notwithstanding the data that shows more and more farm produce is being sold to private players — instead of the government via MSPs — already.

39. On the other hand, one can understand why farmers are so sceptical about markets. A good example is what happened when the government enforced a ban on onion exports. In doing so, the government prioritised the interests of the consumers over the interest of the farmers (the producers).

40. This is not the first time. There are innumerable past examples when the government's decision to protect the consumers from higher prices have resulted in farmers being robbed of the higher prices a free market could have provided them. In fact, the MSP, it can be argued, is the embodiment of this distrust.

41. Another underlying structural problem is the lack of information with farmers, which inhibits their ability to make the best decision for themselves. For instance, how will an average farmer figure out the right price for his or her produce?

42. Similarly, in the absence of adequate infrastructure to store their produce, farmers may not have the capacity to bargain effectively even if they knew the right price.

Where is all this heading to?

43. In the end, what will determine the results of this latest set of reforms will be their implementation.

44. If farmers feel robbed and exploited when they participate more fully in the market, they will blame the political masters. But, if they taste success via better returns on a sustained basis — higher profits that allow them to afford better standards of living — then several long-standing doubts and misgivings about markets and these reforms will melt.

45. Farmers in Punjab and Haryana **have been protesting** against three ordinances promulgated by the Centre on June 5. After the Monsoon Session of Parliament began this week, the government has introduced three Bills to replace these ordinances.

46. Lok Sabha passed these bills this week. On Thursday, SAD leader Sukhbir Badal announced in Lok Sabha that Harsimrat Badal, the Union minister for Food Processing Industries from his party, will resign in protest over these bills.

What are these ordinances, and why are farmers protesting?

47. They are called The Farmers Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020; The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance, 2020; and The Essential Commodities (Amendment) Ordinance, 2020.
48. While farmers are protesting against all three ordinances, their objections are mostly against the provisions of the first. And while there is no uniform demand among the protesters or a unified leadership, it emerges that their concerns are mainly about sections relating to “trade area”, “trader”, “dispute resolution” and “market fee” in the first ordinance.
49. A look at these sections, one by one:

What is a ‘trade area’?

50. Section 2(m) of The Farmers Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020 defines “trade area” as any area or location, place of production, collection and aggregation including (a) farm gates; (b) factory premises; (c) warehouses; (d) silos; (e) cold storages; or (f) any other structures or places, from where trade of farmers’ produce may be undertaken in the territory of India.
51. The definition does not, however, include “the premises, enclosures and structures constituting (i) physical boundaries of principal market yards, sub-market yards and market sub-yards managed and run by the market committees formed under each state APMC (Agricultural Produce Market Committee) Act”. It also excludes “private market yards, private market sub-yards, direct marketing collection centres, and private farmer-consumer market yards managed by persons holding licences or any warehouses, silos, cold storages or other structures notified as markets or deemed markets under each State APMC Act in force in India”.
52. In effect, existing mandis established under APMC Acts have been excluded from the definition of trade area under the new legislation. The government says the creation of an additional trade area outside of mandis will provide farmers the freedom of choice to conduct trade in their produce.
53. The protesters say this provision will confine APMC mandis to their physical boundaries and give a free hand to big corporate buyers. “The APMC mandi system has developed very well as every mandi caters to 200-300 villages. But the new ordinance has confined the mandis to their physical boundaries,” said Balbir Singh Rajewal, president of Bhartiya Kisan Union (Rajewal), who tried to protest against the ordinances at Jantar Mantar in New Delhi but was not allowed by police.

What is ‘trader’ and how is it linked to the protests?

54. Section 2(n) of the first ordinance defines a “trader” as “a person who buys farmers’ produce by way of inter-State trade or intra-State trade or a combination thereof, either for self or on behalf of one or more persons for the purpose of wholesale trade, retail, end-use, value addition, processing, manufacturing, export, consumption or for such other purpose”. Thus, it includes processor, exporter, wholesaler, miller, and retailer.
55. According to the Ministry of the Agriculture and Farmers’ Welfare, “Any trader with a PAN card can buy the farmers’ produce in the trade area.”
56. A trader can operate in both an APMC mandi and a trade area. However, for trading in the mandi, the trader would require a licence/registration as provided for in the State APMC Act. In the present mandi system, arhatiyas (commission agents) have to get a licence to trade in a mandi.
57. The protesters say arhatiyas have credibility as their financial status is verified during the licence approval process. “But how can a farmer trust a trader under the new law?” Rajewal said.
58. This also explains why the protests have mostly been concentrated in Punjab and Haryana. The arhatiya system is more influential in these two states than in other states, agriculture experts said.

Why does the provision on ‘market fee’ worry protesters?

59. Section 6 states that “no market fee or cess or levy, by whatever name called, under any State APMC Act or any other State law, shall be levied on any farmer or trader or electronic trading and transaction platform for trade and commerce in scheduled farmers’ produces in a trade area”. Government officials say this provision will reduce the cost of transaction and will benefit both the farmers and the traders.
60. Under the existing system, such charges in states like Punjab come to around 8.5% — a market fee of 3%, a rural development charge of 3% and the arhatiya’s commission of about 2.5%.
61. Rajewal said that by removing the fee on trade, the government is indirectly incentivising big corporates. They said this provision does not provide a level playing field to APMC mandis. “If you calculate the mandi transaction cost on 1 quintal wheat, at 8.5% all inclusive, it comes about Rs 164. So, on the sale of every quintal of wheat outside of the mandi, you are incentivising big corporates, who will use this difference to offer better prices to farmers in the initial days. And when the APMC mandi system collapses in due course, they will monopolise the trade,” Rajewal said.

62. A government official, on the other hand, questioned why the states do not make transactions in mandis cost-efficient. "When they are giving free electricity and other subsidies, why can't they provide a free facility to farmers for selling their produce?" the official said.

What is the objection as far as dispute resolution is concerned?

63. The protesters say that the provision on dispute resolution under Section 8 does not sufficiently safeguard farmers' interests. It provides that in case of a dispute arising out of a transaction between the farmer and a trader, the parties may seek a mutually acceptable solution through conciliation by filing an application to the Sub-Divisional Magistrate, who shall refer such dispute to a Conciliation Board to be appointed by him for facilitating the binding settlement of the dispute.

64. Farmers fear the proposed system of conciliation can be misused against them. They say the ordinance does not allow farmers to approach a civil court.

What is the government's defence?

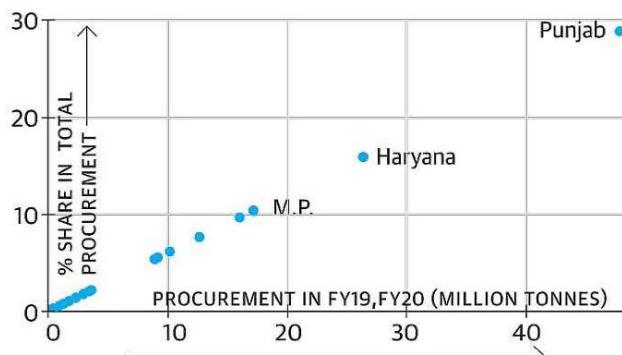
65. While the Opposition has echoed farmers in alleging that the new legislation will benefit only big farmers and hoarders, the government said the provisions will be beneficial to all: farmers, consumers and traders.

66. "Almost all agriculture experts and economists were batting for these reforms in the agriculture sector. The Centre was also persuading states to implement the Model APMC Act, 2002-03. But the states did not fully adopt it. Therefore, the Centre had to adopt the ordinance route... It will lead to helping farmers realise a better price. This is very forward-looking legislation and it is a win-win situation for all farmers, consumers and entrepreneurs," said Ramesh Chand, member of NITI Aayog.

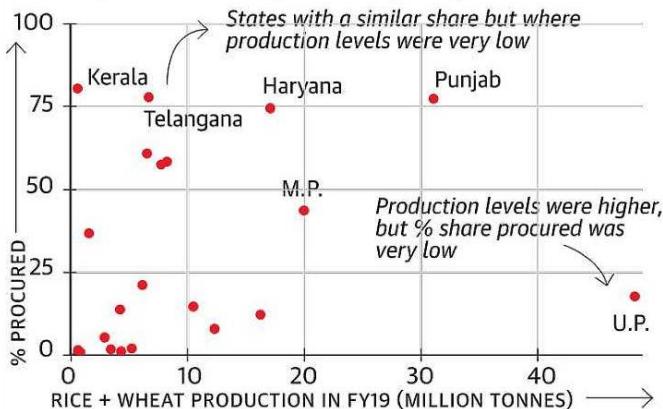
Farmer angst

The two agriculture-related Bills passed in the Rajya Sabha on Sunday have been opposed by several farmer organisations for various reasons. The chief concern seems to be the fear of losing government procurement at the Minimum Support Price. Farmers in Punjab and Haryana depend more on procurement by government agencies compared to their compatriots elsewhere in the country. This could explain why protests are concentrated in these States. By **The Hindu Data Team**

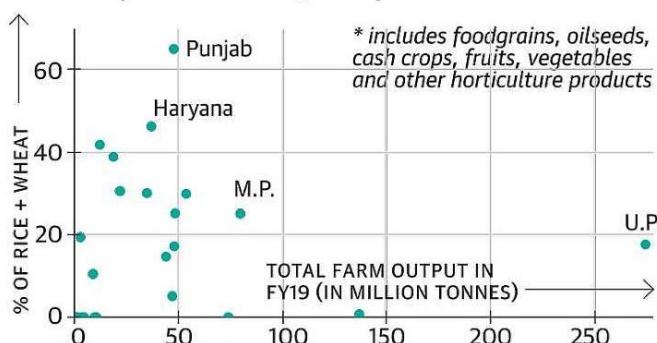
1. TOP BENEFICIARIES | In the last two years, close to 45% of all the rice and wheat procured by govt. agencies came from just two States - Punjab (28.9%) and Haryana (15.9%). M.P. was a distant third at 10.4%



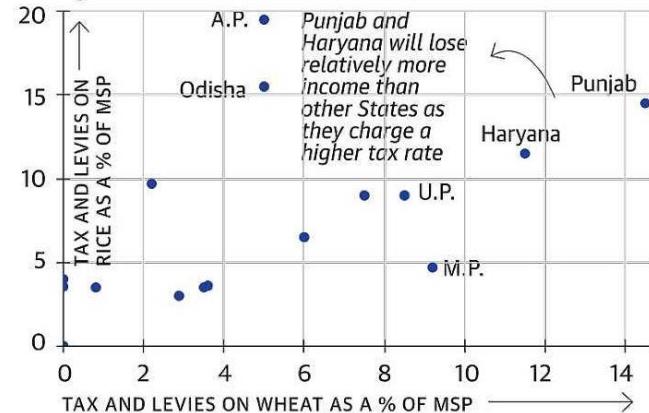
2. MOST PRODUCE PROCURED | In FY19, govt. agencies procured more than 75% of all the rice and wheat produced in Punjab and Haryana. Rice and wheat are the two major commodities procured by the govt.



3. DEPENDENCE ON RICE AND WHEAT | About 65% of Punjab's total farm output* in FY19 was only rice and wheat. For Haryana, it was 46%. These were the only States where the contribution of rice and wheat to total farm output exceeded 45% that year



4. REVENUE SOURCE | The Bills allow farmers to sell outside government-regulated markets. Such a move will hit the income that States earn through taxes and levies charged on commodities sold in such markets



SOURCE: DFPD.GOV.IN, FCI.GOV.IN, NHB.GOV.IN, INDIABUDGET.GOV.IN

TOPIC 34. ESSENTIAL ITEMS



EXPRESS
explained.

1. On Tuesday, Rajya Sabha passed the Essential Commodities (Amendment) Bill, 2020 which is aimed at deregulating commodities such as cereals, pulses, oilseeds, edible oils, onion and potatoes. The Bill had been introduced and passed in Lok Sabha last week. It replaces an ordinance that the government had promulgated on June 5, along with **two other ordinances on the farm sector**. As with the two other ordinances (also passed as Bills) that have seen protests from farmers in Punjab and Haryana, there have been concerns about the provisions of this Bill, too.

What is the Bill about?

2. It is a four-page Bill that amends the Essential Commodities Act, 1955, by introducing a new Subsection (1A) in Section 3.
3. After the amendment, the supply of certain foodstuffs — including cereals, pulses, oilseeds, edible oils, potato — can be regulated only under extraordinary circumstances, which include an extraordinary price rise, war, famine, and natural calamity of a severe nature. In effect, the amendment takes these items out from the purview of Section 3(1), which gives powers to central government to “control production, supply, distribution, etc, of essential commodities”.
4. Earlier, these commodities were not mentioned under Section 3(1) and reasons for invoking the section were not specified. The amendments states that “such order for regulating stock limit shall not apply to a processor or value chain participant of any agricultural produce, if the stock limit of such person does not exceed the overall ceiling of installed capacity of processing, or the demand for export in case of an exporter...”

How is an ‘essential commodity’ defined?

5. There is no specific definition of essential commodities in the Essential Commodities Act, 1955. Section 2(A) states that an “essential commodity” means a commodity specified in the Schedule of the Act.
6. The Act gives powers to the central government to add or remove a commodity in the Schedule. The Centre, if it is satisfied that it is necessary to do so in public interest, can notify an item as essential, in consultation with state governments.
7. According to the Ministry of Consumer Affairs, Food and Public Distribution, which implements the Act, the Schedule at present contains seven commodities — drugs; fertilisers, whether inorganic, organic or mixed; foodstuffs including edible oils; hank yarn made wholly from cotton; petroleum and petroleum products; raw jute and jute textiles; seeds of food-crops and seeds of fruits and vegetables, seeds of cattle fodder, jute seed, cotton seed.

8. By declaring a commodity as essential, the government can control the production, supply, and distribution of that commodity, and impose a stock limit.

Under what circumstances can the government impose stock limits?

9. While the 1955 Act did not provide a clear framework to impose stock limits, the amended Act provides for a price trigger. It says that agricultural foodstuffs can only be regulated under extraordinary circumstances such as war, famine, extraordinary price rise, and natural calamity.

10. However, any action on imposing stock limits will be based on the price trigger.

11. Thus, in case of horticultural produce, a 100% increase in the retail price of a commodity over the immediately preceding 12 months or over the average retail price of the last five years, whichever is lower, will be the trigger for invoking the stock limit.

12. For non-perishable agricultural foodstuffs, the price trigger will be a 50% increase in the retail price of the commodity over the immediately preceding 12 months or over the average retail price of the last five years, whichever is lower.

13. However, exemptions from stock-holding limits will be provided to processors and value chain participants of any agricultural produce, and orders relating to the Public Distribution System.

14. "Price triggers will also minimise the earlier uncertainties associated with the imposition of orders under stock limits. This will now be more transparent and help in better governance," said a source at the Consumer Affairs Ministry.

15. "The last 10 years have seen periods of prolonged application of the EC Act. Once imposed, they were for long periods — pulses from 2006 to 2017, rice from 2008 to 2014, edible oilseeds from 2008 to 2018. Amendments to the EC Act seek to remove this uncertainty by defining criteria for the process of imposing stock limits and making it more transparent and accountable," the source said.

Why was the need for this felt?

16. The 1955 Act was legislated at a time when the country was facing a scarcity of foodstuffs due to persistent low levels of foodgrains production. The country was dependent on imports and assistance (such as wheat import from the US under PL-480) to feed the population. To prevent hoarding and black marketing of foodstuffs, the Essential Commodities Act was enacted in 1955.

17. But now the situation has changed. A note prepared by the Ministry of Consumer Affairs, Food and Public Distribution shows that production of wheat has increased 10 times (from less than 10 million tonnes in 1955-56 to more than 100 million tonnes in 2018-19), while the production of rice has increased more than four times (from around 25 million tonnes to 110 million tonnes during the same period). The production of pulses has increased 2.5 times, from 10 million tonnes to 25 million tonnes.

18. In fact, India has now become an exporter of several agricultural products.

What will be the impact of the amendments?

19. The key changes seek to free agricultural markets from the limitations imposed by permits and mandis that were originally designed for an era of scarcity. The move is expected to attract private investment in the value chain of commodities removed from the list of essentials, such as cereals, pulses, oilseeds, edible oils, onions and potatoes.

20. While the purpose of the Act was originally to protect the interests of consumers by checking illegal trade practices such as hoarding, it has now become a hurdle for investment in the agriculture sector in general, and in post-harvesting activities in particular. The private sector had so far hesitated about investing in cold chains and storage facilities for perishable items as most of these commodities were under the ambit of the EC Act, and could attract sudden stock limits. The amendment seeks to address such concerns.

Why is it being opposed?

21. This was one of the three ordinances/Bills that have seen protests from farmers in parts of the country. The Opposition says the amendment will hurt farmers and consumers, and will only benefit hoarders. They say the price triggers envisioned in the Bill are unrealistic — so high that they will hardly ever be invoked.

TOPIC 35. SHIMLA - MATAUR HIGHWAY

1. Shimla-Mataur highway, one of Himachal Pradesh's primary national highways set for four-laning, was declared unviable by central government. A look at why road is important for state, and what latest development means: **Shimla-Mataur highway**

2. Shimla-Mataur highway is a national highway that runs northwest from Shimla for around 223 kilometres, passing through districts of Solan, Bilaspur and Hamirpur before ending at Mataur junction in Kangra district, around 13 kilometres away from Dharamshala.

Why is it important?

3. Highway connects state capital Shimla to Kangra, state's most populated district and home to Himachal's second capital Dharamshala. Kangra, Bilaspur and Hamirpur fall in a region commonly called lower Himachal, primarily connected to Shimla via this highway.
4. Besides the districts directly connected, the highway also facilitates indirect linking of Shimla with parts of Mandi, Kullu, Una and Chamba districts – in effect, it connects Shimla with 9 out of 12 districts in the state. It's important from the point of view of religious tourism too, since it provides connectivity to some major pilgrimage centres and popular temples in lower Himachal.

What is the history and status of the road-widening project?

5. In June 2016, Union ministry for road transport and highways announced that the highway would be four-laned. In addition, NHAI was to build tunnels and bridges along route and bypass some towns, to reduce distance and travel-time.
6. Road was to be widened in 5 different 'packages', or sections, and NHAI hired M/s Inter Continental Consultants and Technocrats, New Delhi, to prepare detailed project reports (DPRs) for this.
7. Delays in the DPR process caused the High Court of Himachal Pradesh to intervene in the matter in 2017 on its own motion in public interest. The HC last year directed NHAI and other agencies involved to ensure expeditious completion of works. In his budget speech earlier this year, Chief Minister Jai Ram Thakur mentioned the highway as a priority project for the state.
8. Final DPR is now complete, an NHAI official told Indian Express, and the land acquisition process is underway. Last week, Thakur told the state legislative Assembly that for Package V of the highway, a 36-kilometre stretch from Kangra to Jwalamukhi, around 66 hectares of land have already been acquired by the Centre.
9. However, no construction/excavation work has begun yet.

When was it declared unviable?

10. On July 3 this year, the Union ministry of road transport and highways wrote to NHAI regarding the unviability of 2,887 kilometres of highways in the country, which included the Shimla-Mataur highway.
11. NHAI then asked ministry to transfer development, maintenance and repair of road to state public works department.
12. Thakur told Assembly that communication between ministry and NHAI was regarding viability of various projects according to market borrowings, so that planning could be done for them according to ministry's annual budget.
13. According to an NHAI official, the projected cost of the road-widening is Rs 10,000 crore, of which Rs 7,000 crore is the project cost and Rs 3,000 crore the land acquisition cost. The financial crisis caused by the Covid pandemic was one of the factors behind the project being declared unviable, the official said.

So, is the four-laning cancelled?

14. The CM said he reached out to Gadkari following the development, after which the ministry asked the NHAI to continue to repair, develop and maintain the road instead of handing it to the state.
15. "The state is committed towards the four-laning of this highway, and the matter is being raised with the Centre regularly," Thakur said in the Assembly. He added that the government would try to get it done through the NHAI or through a Build Operate Transfer (BOT)/Hybrid Annuity Model (HAM)/Engineering, Procurement and Construction (EPC) contract under the budgetary provisions of the Union ministry.
16. About the communication regarding the "unviability" of the project, he said: "Letters keep getting posted but are not the final word."
17. The Opposition Congress, however, is skeptical. Opposition leader Mukesh Agnihotri said during the Assembly session that Gadkari announced road projects worth Rs 65,000 crore in the past, but little has been done on the ground. He alleged that the road-widening of the Pathankot-Mandi highway also stands threatened, as a 40-kilometre stretch of the highway was included in the list of unviable projects.

TOPIC 36. INTERNATIONAL AIR BUBBLES

- Even though India has extended its embargo on international flights till September 30, "air bubbles" or "air bridges" have become only medium through which commercial international travel has resumed since mid-July. Since then, India's air bubble count has gone up to 13, with Japan being the latest country to make it to the list.
- With some European countries witnessing a second wave of infections, air bubbles, which allow citizens to travel freely between specified nations under a reciprocal arrangement, seem to be 'new normal' even as international air travel demand remains tepid. In fact, Union Civil Aviation Ministry has said India was negotiating with 13 other countries for air bubble arrangements.

What is an air bubble/travel bubble?

- In order to mitigate a host of quarantine and Covid-10 testing rules in arrival destinations, governments are implementing "air bubble" agreements between countries. Air bubbles or travel corridors are systems established between two countries that perceive each other to be safe and allow carriers of both the countries to fly passengers either way without any restrictions.
- Such an arrangement will also allow the members of the group to rekindle trade ties with each other, and kickstart sectors such as travel and tourism. The Baltic countries of Estonia, Lithuania, and Latvia were the first ones to create an air bubble, allowing free travel among themselves, while restricting outsiders.
- It is different from repatriation flights, which are only one way and the passengers have to register themselves with the embassy to board such flights.

With which countries India has air bubble agreements?

- In July, India had initially established travel bubbles with United States, Germany and France. Since India has formed agreements with 10 other nations — United Kingdom, Canada, the Maldives, UAE, Qatar, Bahrain, Nigeria, Iraq, Afghanistan and Japan.
- India was negotiating with 13 other countries to resume international flight operations. These countries include Italy, New Zealand, Australia, Israel, Kenya, Philippines, Russia, Singapore, South Korea and Thailand.

Who is allowed to travel to these countries?

- Indian nationals holding a valid visa with validity of at least one month — other than visa for tourism purpose — are allowed to travel. Besides, the government has now allowed all OCI cardholders to arrive into India. The foreign airlines have also been permitted to carry passengers who want to transit through their countries subject to the destination country allowing travel into their borders. The Civil Aviation Ministry has released detailed guidelines on who can travel to these countries from India along with the criteria for travelling to India from these countries.

- Afghanistan:** India has established an air transport bubble with Afghanistan. Indian carriers and Ariana Afghan Airlines are now permitted to operate services between India and Afghanistan and carry the following categories of persons on such flights:

A. From India to Afghanistan

- Afghanistan nationals/residents and foreign nationals holding valid Afghanistan visas, if required;
- Any Indian national holding any type of valid visa from Afghanistan and destined for Afghanistan only. It would be for airlines concerned to ensure that there is no travel restriction for Indian nationals to enter Afghanistan with particular visa category before issue of ticket/ boarding pass to Indian passenger.

B. From Afghanistan to India

- Indian nationals stranded in Afghanistan;
- All Overseas Citizen of India (OCI) cardholders holding Afghanistan passports; and
- Foreigners (including diplomats) holding valid visa issued by an Indian Mission in any category covered under Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.

- Bahrain:** India has created an air travel arrangement with Bahrain. Air India/Air India Express and Gulf Air are now permitted to operate services between India and Bahrain and carry following categories of persons on such flights:

A. From India to Bahrain

- Bahraini nationals/residents;
- Any Indian national holding any type of valid visa from the Kingdom of Bahrain and destined for Bahrain only. It would be for the airlines concerned to ensure that there is no travel restriction for Indian nationals to enter Bahrain with the particular visa category before issue of ticket/ boarding pass to the Indian passenger.

B. From Bahrain to India

- Indian nationals stranded in Bahrain;

- b. All Overseas Citizen of India (OCI) cardholders holding Bahraini passports; and
 - c. Bahraini nationals (including diplomats) holding valid visa issued by an Indian Mission in any category covered under Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.
- 3. Canada:** India has created an air travel arrangement with Canada. Indian carriers and Air Canada are now permitted to operate services between India and Canada and carry following categories of persons on such flights:
- A. From India to Canada**
- a. Stranded Canadian nationals/residents and foreigners with valid Canadian visa eligible to enter Canada;
 - b. Indian nationals with valid visas eligible to enter Canada. It would be for the airlines concerned to ensure that there is no travel restriction for Indian nationals to enter Canada before issue of ticket/ boarding pass to the Indian passenger; and
 - c. Seamen of foreign nationalities; Seamen holding Indian passports would be allowed subject to clearance from the Ministry of Shipping
- B. From Canada to India**
- a. Stranded Indian nationals;
 - b. All Overseas Citizen of India (OCI) cardholders holding Canadian passports; and
 - c. Foreigners (including diplomats), who are eligible to enter India as per Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.
- 4. France:** India has created an air bubble arrangement with France. Indian and French carriers are now permitted to operate services between India and France and carry following categories of persons on such flights:
- A. From India to France**
- a. Indian nationals who are permitted to travel abroad as per MHA guidelines dated 01.07.2020 and destined for EU;
 - b. Stranded EU nationals/residents, foreign nationals destined for Europe and transiting through France or spouses of these persons, whether accompanying or otherwise; and
 - c. Seamen of foreign nationalities; Seamen holding Indian passports would be allowed subject to clearance from the Ministry of Shipping.
- B. From France to India**
- a. Stranded Indian nationals;
 - b. Foreigners (including diplomats and OCI card holders), who are eligible to enter India as per Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.
- 5. Germany:** India has created an air bubble arrangement with Germany. Indian and German carriers are now permitted to operate services between India and Germany and carry following categories of persons on such flights:
- A. From India to Germany**
- a. Indian nationals who are permitted to travel abroad as per MHA guidelines dated 01.07.2020 and destined for EU;
 - b. Stranded EU nationals/residents, foreign nationals destined for Europe and transiting through Germany or spouses of these persons, whether accompanying or otherwise; and
 - c. Seamen of foreign nationalities; Seamen holding Indian passports would be allowed subject to clearance from the Ministry of Shipping.
- B. From Germany to India**
- a. Stranded Indian nationals;
 - b. Foreigners (including diplomats and OCI card holders), who are eligible to enter India as per Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.
- 6. Iraq:** India has created an air bubble arrangement with Iraq. Indian and Iraqi carriers are now permitted to operate services between India and Iraq and carry the following categories of persons on such flights:
- A. From India to Iraq**
- a. Nationals/residents of Iraq;
 - b. Any Indian national holding any type of valid visa from Iraq and destined for Iraq only. It would be for airlines concerned to ensure that there is no travel restriction for Indian nationals to enter Iraq with particular visa category before issue of ticket/ boarding pass to Indian passenger.
- B. From Iraq to India**
- a. Indian nationals stranded in Iraq;
 - b. All Overseas Citizen of India (OCI) cardholders holding passports of Iraq; and

- c. Nationals of Iraq (including diplomats), holding valid visa issued by an Indian Mission in any category covered under Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.
- 7. Japan:** India has created an air bubble with Japan. Indian and Japanese carriers are now permitted to operate services between India and Japan and carry the following categories of persons on such flights:
- A. From India to Japan**
- a. Stranded nationals/residents of Japan and foreign nationals holding valid Japanese visas subject to border measures and travel restrictions imposed by the government of Japan at time of travel;
 - b. Any Indian national holding any type of valid visa from Japan subject to the border measures and travel restrictions imposed by the government of Japan at the time of travel. It would be for the airlines concerned to ensure that there is no travel restriction for Indian nationals to enter Japan with the particular visa category before issue of ticket/ boarding pass to the Indian passenger.
- B. From Japan to India**
- a. Stranded Indian nationals;
 - b. All Overseas Citizen of India (OCI) cardholders holding passports of Japan; and
 - c. Foreigners (including diplomats), holding valid visa issued by an Indian Mission in any category covered under Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.
- 8. Maldives:** India has created an air bubble arrangement with Maldives. Indian and Maldivian carriers are now permitted to operate flights between India and Maldives and carry following categories of persons on such flights:
- A. From India to Maldives:**
- a. Maldivian nationals/residents and foreign nationals holding valid Maldivian visas, if required;
 - b. Any Indian national. It would be for the airlines concerned to ensure that there is no travel restriction for Indian nationals to enter Maldives before issue of ticket/ boarding pass to the Indian passenger.
- B. From Maldives to India:**
- a. Indian nationals;
 - b. All Overseas Citizen of India (OCI) cardholders holding Maldivian passports, and
 - c. Foreigners (including diplomats) holding valid visa issued by an Indian Mission in any category covered under Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.
- 9. Nigeria:** India has created an air bubble arrangement with Nigeria. Indian and Nigerian carriers are now permitted to operate flights between India and Nigeria and carry following categories of persons on such flights:
- A. From India to Nigeria:**
- a. Stranded Nigerian nationals/residents, foreign nationals destined for Africa and transiting through Nigeria or spouses of these persons, whether accompanying or otherwise;
 - b. Any Indian national holding any type of valid Nigerian visa and destined for any country in Africa. It would be for the airlines concerned to ensure that there is no travel restriction for Indian nationals to enter the destination country before issue of ticket/ boarding pass to the Indian passenger; and
 - c. Seamen of foreign nationalities; Seamen holding Indian passports would be allowed subject to clearance from the Ministry of Shipping.
- B. From Nigeria to India:**
- a. Indian nationals stranded in any country in Africa;
 - b. All Overseas Citizen of India (OCI) cardholders holding Nigerian passports;
 - c. Overseas Citizen of India (OCI) cardholders holding passports issued by any country in Africa who are eligible to enter India as per MHA guidelines dated 30.06.2020 as amended from time to time; and
 - d. Foreigners (including diplomats) holding valid visa issued by an Indian Mission in any category covered under Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.
- 10. Qatar:** India has created an air bubble arrangement with the State of Qatar. This bubble is valid till 31.10.2020. Indian carriers and Qatar Airways are now permitted to operate flights between India and Qatar and carry the following categories of persons on such flights:
- A. From India to Qatar:**
- a. Qatari nationals;
 - b. Any Indian national holding any type of valid Qatar visa and destined for Qatar only. It would be for the airlines concerned to ensure that there is no travel restriction for Indian nationals to enter Qatar with the particular visa category before issue of ticket/ boarding pass to the Indian passenger.
- B. From Qatar to India:**
- a. Indian nationals stranded in Qatar;
 - b. All Overseas Citizen of India (OCI) cardholders holding Qatari passports, and

- c. Qatari nationals (including diplomats) holding valid visa issued by an Indian Mission in any category covered under Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.

11. United Arab Emirates (UAE): India has created an air bubble arrangement with the United Arab Emirates (UAE). This bubble is valid till 31.10.2020. Indian and UAE carriers are now permitted to operate flights between India and UAE and carry the following categories of persons on such flights:

A. From India to UAE:

- a. UAE nationals.
- b. ICA approved UAE residents destined for UAE only.
- c. Any Indian national holding any type of valid UAE visa and destined for UAE only. It would be for the airlines concerned to ensure that there is no travel restriction for Indian nationals to enter UAE with the particular visa category before issue of ticket/ boarding pass to the Indian passenger.

B. From UAE to India:

- a. Stranded Indian nationals;
- b. All Overseas Citizen of India (OCI) cardholders holding UAE passports; and
- c. UAE nationals (including diplomats) holding valid visa issued by an Indian Mission in any category covered under Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.

12. United Kingdom (UK): India has created an air travel arrangement with the United Kingdom. Indian and UK carriers are now permitted to operate services between India and UK and carry the following categories of persons on such flights:

A. From India to UK

- a. Stranded UK nationals/residents, foreign nationals transiting through UK or spouses of these persons, whether accompanying or otherwise;
- b. Any Indian national holding any type of valid UK visa and destined for UK only. It would be for the airlines concerned to ensure that there is no travel restriction for Indian nationals to enter UK with the particular visa category before issue of ticket/ boarding pass to the Indian passenger; and
- c. Seamen of foreign nationalities; Seamen holding Indian passports would be allowed subject to clearance from the Ministry of Shipping

B. From UK to India

- a. Stranded Indian nationals;
- b. All Overseas Citizen of India (OCI) cardholders holding UK passports; and
- c. Foreigners (including diplomats), who are eligible to enter India as per Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.

13. United States of America (USA): India has created an air travel arrangement with the United States of America. Indian and US carriers are now permitted to operate services between India and USA and carry the following categories of persons on such flights:

A. From India to USA

- a. US citizens, legal permanent residents, and foreign nationals holding valid US visas;
- b. Any Indian national holding any type of valid US visa. It would be for the airlines concerned to ensure that there is no travel restriction for Indian nationals to enter USA with the particular visa category before issue of ticket/ boarding pass to the Indian passenger; and
- c. Seamen of foreign nationalities; Seamen holding Indian passports would be allowed subject to clearance from the Ministry of Shipping

B. From USA to India

- a. Stranded Indian nationals;
- b. All Overseas Citizen of India (OCI) cardholders holding US passports; and
- c. Foreigners (including diplomats), who are eligible to enter India as per Ministry of Home Affairs (MHA) guidelines dated 30.06.2020 as amended from time to time.

TOPIC 37. AIRCRAFT LAW



1. Rajya Sabha on Tuesday (September 15) passed The Aircraft (Amendment) Bill 2020, which seeks to provide statutory status to Directorate General of Civil Aviation (DGCA), Bureau of Civil Aviation Security (BCAS), and Aircraft Accidents Investigation Bureau (AAIB).

What will change when this Bill becomes law?

2. The latest amendments to the Aircraft Act of 1934 seek to expand the role of the two regulators — DGCA and BCAS — and of the AAIB.
3. The DGCA, which is aviation safety regulator, will be empowered to impose penalties for certain violations in addition to increasing the maximum penalty limit to Rs 1 crore from existing Rs 10 lakh.
4. However, the amendments will also now allow the Ministry of Civil Aviation to review any order passed by the Director General of Civil Aviation and the Director General of Civil Aviation Security, and also direct them to rescind or modify such order.

But why are these amendments being made to the Aircraft Act?

5. The Aircraft Act of 1934 was enacted to make provisions for the control of the manufacture, possession, use, operation, sale, import and export of aircraft.
6. It makes provisions for securing the safety of aircraft operations in India, and for carrying out civil aviation operations as per internationally accepted standards, procedures and practices as laid down by the International Civil Aviation Organisation (ICAO).
7. From time to time, government has made amendments to Act to meet evolving global and Indian aviation scenario. Various changes that needed to be made necessitated amendments to Aircraft Act.

So, what was the trigger for these changes now?

8. The ICAO, under its Universal Safety Oversight Audit Programme and the Universal Security Audit Programme, regularly conducts safety and security audits of all countries which are signatory to the Chicago Convention to ensure they are carrying out their safety and security oversight functions.
9. The Federal Aviation Administration (FAA) of the United States also conducts safety audits of countries whose airlines operate to the US under its International Aviation Safety Assessment Programme.
10. India, as a signatory, is also subjected to periodic audits by ICAO and the FAA. According to government sources, the audits conducted by the ICAO in 2012 and 2015 indicated a need to amend the Aircraft Act to give proper recognition to the regulators under the Act, to enhance the maximum quantum of fines and to empower the departmental officers to impose financial penalties on individuals or organisations involved in violations of the legal provisions and to include certain areas of air navigation services for rulemaking purposes under Section 5 of the Act.

TOPIC 38. MPs SUSPENSION



1. Eight Rajya Sabha MPs **were suspended** on Monday (September 21) for unruly behaviour in the House the previous day (September 20). The motion was passed by a voice vote.
2. The government moved a motion seeking the suspension of Derek O'Brien (TMC), Sanjay Singh (AAP), Rajeev Satav (Congress), K K Ragesh (CPM), Syed Nazir Hussain (Congress), Ripun Boren (Congress), Dola Sen (TMC) and Elamaram Kareem (CPM).
3. After the motion was adopted, Chairman M Venkaiah Naidu asked the MPs to leave the House. The suspended members initially refused to leave, and then sat on a dharna outside Parliament. The Opposition sharply criticised the suspension of the MPs.

What is the reason for suspending an MP?

4. The general principle is that it is the role and duty of the Presiding Officer — Speaker of Lok Sabha and Chairman of Rajya Sabha — to maintain order so that the House can function smoothly. The suspension of the eight members comes a day after the Upper House witnessed massive unruly scenes by protesting Opposition members during the passage of two farm Bills.
5. In order to ensure that proceedings are conducted in the proper manner, the Speaker/Chairman is empowered to force a Member to withdraw from the House.

What are the Rules under which the Presiding Officer acts?

6. Rule Number 373 of the Rules of Procedure and Conduct of Business says: "The Speaker, if is of the opinion that the conduct of any Member is grossly disorderly, may direct such Member to withdraw immediately from the House, and any Member so ordered to withdraw shall do so forthwith and shall remain absent during the remainder of the day's sitting."
7. To deal with more recalcitrant Members, the Speaker make take recourse to Rules 374 and 374A.

Rule 374 says:

8. "(1) The Speaker may, if deems it necessary, name a Member who disregards the authority of the Chair or abuses the rules of the House by persistently and wilfully obstructing the business thereof.
9. "(2) If a Member is so named by the Speaker, the Speaker shall, on a motion being made forthwith put the question that the Member (naming such Member) be suspended from the service of the House for a period not exceeding the remainder of the session: Provided that the House may, at any time, on a motion being made, resolve that such suspension be terminated.
10. "(3) A member suspended under this rule shall forthwith withdraw from the precincts of the House."
11. Rule 374A was incorporated in the Rule Book on December 5, 2001. The intention was to skirt around the necessity of moving and adopting a motion for suspension.
12. According to Rule 374A: "(1) Notwithstanding anything contained in rules 373 and 374, in the event of grave disorder occasioned by a Member coming into the well of the House or abusing the Rules of the House persistently and wilfully obstructing its business by shouting slogans or otherwise, such Member shall, on being named by the Speaker, stand automatically suspended from the service of the House for five consecutive sittings or the remainder of the session, whichever is less: Provided that the House may, at any time, on a motion being made, resolve that such suspension be terminated.
13. "(2) On the Speaker announcing the suspension under this rule, the Member shall forthwith withdraw from the precincts of the House."

OK, and what happens in Rajya Sabha?

14. It's largely similar, with one important difference.

15. Like the Speaker in Lok Sabha, the Chairman of Rajya Sabha is empowered under Rule Number 255 of its Rule Book to "direct any Member whose conduct is in his opinion grossly disorderly to withdraw immediately" from the House.
16. Unlike the Speaker, however, the Rajya Sabha Chairman does not have the power to suspend a Member. The House may, by another motion, terminate the suspension.
17. The Chairman may "name a Member who disregards the authority of the Chair or abuses the rules of the Council by persistently and wilfully obstructing" business. In such a situation, the House may adopt a motion suspending the Member from the service of the House for a period not exceeding the remainder of the session.
18. On Monday, Chairman Venkaiah Naidu named all the eight Opposition MPs. He said he was "deeply pained" at what had happened in the House on September 20. "All social distancing and Covid protocols were violated. Whatever happened, defied logic. It was a bad day for the Rajya Sabha. The Deputy Chairman (Harivansh) was physically threatened. I was worried for his physical well-being."

Is suspending an MP a common practice in Parliament?

19. It is strong action, but it is not uncommon.
- On March 5 this year, seven Congress members — Gaurav Gogoi (Kaliabor), T N Prathapan (Thrissur), Dean Kuriakose (Idukki), Rajmohan Unnithan (Kasaragod), Manickam Tagore (Virudhunagar), Benny Behanan (Chalakudy) and Gurjeet Singh Aujla (Amritsar) — were suspended from Lok Sabha during the Budget Session of Parliament.
 - In November 2019, Speaker Om Birla suspended two Congress Members.
 - In January 2019, Birla's predecessor in the Speaker's Chair, Sumitra Mahajan, suspended a total 45 Members belonging to the TDP and AIADMK after they continuously disrupted proceedings for days.
 - On February 13, 2014, then Speaker Meira Kumar suspended 18 MPs from (undivided) Andhra Pradesh following pandemonium in the House. The suspended MPs were either supporting or opposing the creation of the separate state of Telangana.
 - Before that, on September 2, 2014, nine Members were suspended for five days.
 - On August 23, 2013, 12 Members were suspended for five days.
 - And on April 24, 2012, eight Members were suspended for four days.
 - On March 15, 1989, when Rajiv Gandhi was Prime Minister, as many as 63 Members were suspended from Lok Sabha for three days.

Isn't barring of an elected representative of people an extreme step to take in order to curb unruly behaviour?

20. The Opposition members have accused the government of "murdering democracy". Every instance of suspension of an MP triggers strong statements on both sides.
21. In general, a balance has to be struck. There can be no question that the enforcement of the supreme authority of the Presiding Officer is essential for smooth conduct of proceedings. However, it must be remembered that the job of the Presiding Officer is to run the House, not to lord over it.
22. The solution to unruly behaviour has to be long-term and consistent with democratic values. A previous Speaker had ordered that television cameras be focussed on the demonstrating members, so that people could see for themselves how their representatives were behaving in the House.
23. In the present case, however, the Opposition has accused the Chairman of stopping the telecast of the proceedings in Rajya Sabha.
24. What cannot be denied is that Speaker's/Chairman's actions are often dictated more by expediency and the stand of the party that they belong to, rather than by the Rules and principles.
25. So, the ruling party of the day invariably insists on the maintenance of discipline, just as the Opposition insists on its right to protest. And their positions change when their roles flip.

TOPIC 39. PARLIAMENTARY COMMITTEES



EXPRESS
explained.

1. On Sunday, the government pushed **through two crucial agriculture Bills in Rajya Sabha**, rejecting Opposition demands that they be referred to a Select Committee of Rajya Sabha. Proceedings were disrupted as the Opposition protested against the fact that neither Bill had been scrutinised by a parliamentary committee.

What is a parliamentary committee's role in passage of a Bill?

2. Parliament scrutinises legislative proposals (Bills) in two ways. The first is by discussing it on the floor of the two Houses. This is a legislative requirement; all Bills have to be taken up for debate. The time spent debating the bills can vary. They can be passed in a matter of minutes, or debate and voting on them can run late into the night. Since Parliament meets for 70 to 80 days in a year, there is not enough time to discuss every Bill in detail on the floor of the House. Plus debate in the house is mostly political and does not go into the technical details of a legislative proposal.
3. The second mechanism is by referring a Bill to a parliamentary committee. It takes care of the legislative infirmity of debate on the floor of the House. Woodrow Wilson, before he became US President in 1885: "... it is not far from the truth to say that Congress in session is Congress on public exhibition, whilst Congress in its committee rooms is Congress at work". But referring of Bills to parliamentary committees is not mandatory.

And what is a Select Committee?

4. India's Parliament has multiple types of committees. They can be differentiated on the basis of their work, their membership and the length of their tenure. First are committees that examine bills, budgets and policies of ministries. These are called departmentally related Standing Committees. There are 24 such committees and between them, they focus on the working of different ministries. Each committee has 31 MPs, 21 from Lok Sabha and 10 from Rajya Sabha.
5. When they were being set up in 1993, Vice President K R Narayanan said, "... the main purpose, of course, is to ensure the accountability of Government to Parliament through more detailed consideration of measures in these committees. The purpose is not to weaken or criticise the administration but to strengthen by investing in with more meaningful parliamentary support."
6. Departmentally related Standing Committees have a tenure of one year, then they are reconstituted and their work continues throughout the term of a Lok Sabha. Ministers are not members; key committees like those related to Finance, Defence, Home etc are usually chaired by Opposition MPs.
7. Then there are committees constituted for a specific purpose, with MPs from both Houses. The specific purpose could be detailed scrutiny of a subject matter or a Bill. These are Joint Parliamentary Committees (JPC). In 2011 the issue of telecom licences and spectrum was examined by a JPC headed

by Congress MP P C Chacko. In 2016, the Citizenship (Amendment) Bill was sent to a JPC chaired by BJP MP Rajendra Agarwal.

8. And finally, there is a Select Committee on a Bill. This is formed for examining a particular Bill and its membership is limited to MPs from one House. Last year Rajya Sabha referred the Surrogacy (Regulation) Bill, 2019 to a Select Committee of 23 of its MPs from different parties. The committee was headed by BJP MP Bhupender Yadav. Since both the JPCs and Select Committees are constituted for a specific purpose, they are disbanded after their report. Both these types of committees are chaired by MPs from the ruling party.

When does a committee examine a Bill?

9. Bills are not automatically sent to committees for examination. There are three broad paths by which a Bill can reach a committee. The first is when the minister piloting the Bill recommends to the House that his Bill be examined by a Select Committee of the House or a joint committee of both Houses. Last year Electronics and IT Minister Ravi Shankar Prasad moved a motion in Lok Sabha referring the Personal Data Protection Bill to a Joint Committee. If the minister makes no such motion, it is up to the presiding officer of the House to decide whether to send a Bill to a departmentally related Standing Committee. During the last Lok Sabha, Venkaiah Naidu as Chairman of Rajya Sabha sent eight Bills to departmentally related Standing Committees. And finally, a Bill passed by one House can be sent by the other House to its Select Committee. In 2011, the Lokpal Bill passed by Lok Sabha was sent by Rajya Sabha to its Select Committee. In the last Lok Sabha, multiple Bills were sent to Rajya Sabha select committees.

10. Sending a Bill to any committee results in two things. First, the committee undertakes a detailed examination of the Bill. It invites comments and suggestions from experts, stakeholders and citizens. The government also appears before the committee to present its viewpoint. All this results in a report that makes suggestions for strengthening the Bill. While the committee is deliberating on a Bill, there is a pause in its legislative journey. It can only progress in Parliament after the committee has submitted its report. Usually, parliamentary committees are supposed to submit their reports in three months, but sometimes it can take longer.

What happens after the report?

11. The report of the committee is of a recommendatory nature. The government can choose to accept or reject its recommendations. Very often the government incorporates suggestions made by committees. Select Committees and JPCs have an added advantage. In their report, they can also include their version of the Bill. If they do so, the minister in charge of that particular Bill can move for the committee's version of the Bill to be discussed and passed in the House.

12. In the current Lok Sabha, 17 Bills have been referred to committees. In the 16th Lok Sabha (2014-19), 25% of the Bills were referred to committees, which was much lower than the 71% and 60% in the 15th and 14th Lok Sabha respectively.

TOPIC 40. BREACH OF LEGISLATURE'S PRIVILEGE

1. A motion for **breach of privilege was moved** in the Maharashtra Assembly against Republic TV's Managing Director and Editor-in-Chief Arnab Goswami on Tuesday (September 8). A similar motion was moved in the Maharashtra Legislative Council against actor Kangana Ranaut.
2. The truncated two-day Monsoon Session having ended on Tuesday, the motions could not be taken up by the lawmakers.

Which provisions of the Constitution protect the privileges of the legislature?

3. The powers, privileges and immunities of either House of the Indian Parliament and of its Members and committees are laid down in Article 105 of the Constitution.
4. Article 194 deals with the powers, privileges and immunities of the State Legislatures, their Members and their committees.
5. Parliamentary privilege refers to the right and immunity enjoyed by legislatures, in which legislators are granted protection against civil or criminal liability for actions done or statements made in the course of their legislative duties.

What constitutes a breach of this privilege?

6. While the Constitution has accorded special privileges and powers to parliamentarians and legislators to maintain the dignity and authority of the Houses, these powers and privileges are not codified. Thus, there are no clear, notified rules to decide what constitutes a breach of privilege, and the punishment it attracts.
7. Any act that obstructs or impedes either House of the state legislature in performing its functions, or which obstructs or impedes any Member or officer of such House in the discharge of his duty, or has a tendency, directly or indirectly, to produce such results is treated as breach of privilege.
8. It is a breach of privilege and contempt of the House to make speeches or to print or publish libel reflecting on the character or proceedings of the House, or its Committees, or on any member of the House for or relating to his character or conduct as a legislator.

What is the procedure to be followed in cases of alleged breach of the legislature's privilege?

9. The Legislative Assembly Speaker or Legislative Council Chairman constitutes a Privileges Committee consisting of 15 members in the Assembly and 11 members in the Council.
10. The members to the committee are nominated based on the party strength in the Houses.
11. Anant Kalse, retired principal secretary of the Maharashtra State Legislature, said that the Speaker or Chairman first decides on the motions. "If the privilege and contempt are found *prima facie*, then the Speaker or Chairman will forward it to the Privileges Committee by following the due procedure," Kalse said.
12. In Goswami's case, the Committee will examine whether statements made by him had insulted the state legislature and its Members, and whether their image was maligned before the public.
13. At present, there is no Privileges Committee in either House of the state legislature. Kalse said that the Committee, which has quasi-judicial powers, will seek an explanation from all the concerned, will conduct an inquiry and will make a recommendation based on the findings to the state legislature for its consideration.

What is the punishment for an individual who is found guilty of breaching the legislature's privilege?

14. If the Committee finds the offender guilty of breach of privilege and contempt, it can recommend the punishment. The punishment can include communicating the displeasure of the state legislature to the offender, summoning the offender before the House and giving a warning, and even sending the offender to jail.
15. In the case of the media, press facilities of the state legislature may be withdrawn, and a public apology may be sought.

TOPIC 41. UNITED NATIONS

1. United Nations completed 75 years this year. In order to commemorate historic moment, world leaders come together at a one-day high-level meeting of UN General Assembly. Meeting, themed as "The Future We Want, the UN We Need: Reaffirming our Collective Commitment to Multilateralism", is a landmark event, as for 1st time in 75 years, the 193-member body would be holding the session virtually on account of the Covid-19 outbreak.
2. Declaration adopted at meeting looks back at glorious years of UN and remarked upon its achievements as well as failures. It also set out its goals for next decade. "Next 10 years, which have been designated as decade of action and delivery for sustainable development, will be most critical of our generation. It is even more important as we build back better from COVID-19 pandemic." Goals listed out for next 10 years include protection of planet and environment, promoting peace, gender equality and women empowerment, digital cooperation, and sustainable financing.
3. The United Nations was born out of the horrors of World War II. At the time of its foundation, it was primarily tasked with the goal of maintaining world peace and saving future generations from the evils of war.

The birth of the United Nations

4. UN was born out of ashes of yet another international organisation created with intention of keeping war away.
5. League of Nations was created in June 1919, after World War I, as part of Treaty of Versailles. However, when World War II broke out in 1939, League closed and its headquarters in Geneva remained empty throughout war.
6. Consequently, in August 1941, American president Franklin D. Roosevelt and British prime minister Winston Churchill held a secret meeting aboard naval ships in Placentia Bay, located in the southeast coast of Newfoundland, Canada. The heads of the two countries discussed the possibility of creating a body for international peace effort and a range of issues related to the war. Together they issued a statement that came to be called the Atlantic Charter. It was not a treaty, but only an affirmation that paved the way for the creation of the UN. It declared the realisation of "certain common principles in the national policies of their respective countries on which they based their hopes for a better future for the world."
7. United States joined war in December 1941, and for first time term 'United Nations' was coined by president Roosevelt to identify those countries which were allied against axis powers. On Jan 1, 1942, representatives of 26 allied nations met in Washington DC to sign declaration of United Nations, which basically spelled out war objectives of Allied powers.
8. Over next couple of years, several meetings took place among Allied big 4 - USA, Soviet Union, United Kingdom and China - to decide on post-war charter that would describe precise role of United Nations.
9. United Nations finally came into existence on Oct 24, 1945 after being ratified by 51 nations, which included five permanent members (France, the Republic of China, the Soviet Union, the UK and the US) and 46 other signatories. The first meeting of the General Assembly took place on January 10, 1946.
10. The four main goals of the UN included maintaining international peace and security, developing friendly relations among nations, achieving international cooperation in solving international problems and being at the center for harmonising the actions of nations in the attainment of these common ends.

Achievements and failures of the UN in the last 75 years

11. While at time of its formation, UN consisted of only 51 member states, independence movements and decolonisation in subsequent years led to an expansion of its membership. At present, 193 countries are members of UN.
12. The UN boasts of several significant achievements in the last 75 years. It has also expanded its scope to resolve over a large number of global issues such as health, environment, women empowerment among others.
13. Soon after its formation, it passed a resolution to commit to the elimination of nuclear weapons in 1946. In 1948, it created the World Health Organisation (WHO) to deal with communicable diseases like smallpox, malaria, HIV. At present the WHO is the apex organisation dealing with the coronavirus pandemic. In 1950, the UN created the High Commissioner for Refugees to take care of the millions who had been displaced due to World War II. It continues to be on the frontlines of crises faced by refugees from countries across the world. In 1972, the UN environment programme was created. More recently in 2002, the UN established the UN criminal court to try those who have committed war crimes, genocide, and other atrocities.
14. The UN has also met with its share of criticisms. In 1994, for instance, the organisation failed to stop the Rwandan genocide. In 2005, UN peacekeeping missions were accused of sexual misconduct in the Republic of Congo, and similar allegations have also come from Cambodia and Haiti. In 2011, the UN peacekeeping mission in South Sudan was unsuccessful in eliminating the bloodshed caused in the civil war that broke out in 2013.

TOPIC 42. INDUS WATER TREATY

1. Sep 19 marks 60th anniversary of Indus Water Treaty between India and Pakistan, a treaty that is often cited as an example of possibilities of peaceful coexistence that exist despite troubled relationship. Well-wishers of treaty often dub it “uninterrupted and uninterruptible”. The World Bank, which, as third party, played a pivotal role in crafting IWT, continues to take pride that treaty functions. Role of India, as a responsible upper riparian abiding by provisions of treaty, has been remarkable but country, of late, is under pressure to rethink extent to which it can remain committed to provisions, as its overall political relations with Pakistan becomes intractable.

Equitable water-sharing

2. Back in time, partitioning Indus rivers system was inevitable after Partition of India in 1947. The sharing formula devised after prolonged negotiations sliced Indus system into two halves. Three ‘western rivers’ (Indus, Jhelum and Chenab) went to Pakistan and three ‘eastern rivers’ (Sutlej, Ravi and Beas) were portioned to India.
3. Equitable it may have seemed, but the fact remained that India conceded 80.52 per cent of the aggregate water flows in the Indus system to Pakistan. It also gave Rs 83 crore in pounds sterling to Pakistan to help build replacement canals from the western rivers. Such generosity is unusual of an upper riparian.
4. India conceded its upper riparian position on the western rivers for the complete rights on the eastern rivers. Water was critical for India’s development plans. It was vital, therefore, to get the waters of the ‘eastern rivers’ for the proposed Rajasthan canal and the Bhakra Dam without which both Punjab and Rajasthan would be left dry, severely hampering India’s food production. Jawaharlal Nehru, while inaugurating the Bhakra Canals in 1963, described it as “a gigantic achievement and a symbol of the nation’s energy and enterprise”.
5. In Pakistan, however, it was an occasion of strong resentment, grieving that India got away with the total flow of 33 million acre-feet on the eastern rivers “virtually for a song”. Nehru was always conscious that the Bhakra Canals should not be at the cost of reduced water supplies to Pakistan. However, he was also very clear that India’s interest on the eastern rivers should be protected hoping that the two countries should someday come to live “amicably and cordially as the United States and Canada live in North America”.

Increasing unease

6. That, of course, has not happened. On the contrary, the Pakistan leadership considers the sharing of the waters with India an unfinished business. What is disputable today has nothing to do with water sharing, which is settled under the IWT, but whether the Indian projects on the western rivers, in particular Jhelum and Chenab, as Pakistan claims, conform to the technical stipulations. Being a lower riparian state, Pakistan’s scepticism of India allows it to increasingly politicise the issue. It is not surprising that it maintains high troop levels and alertness around the canals on the eastern front, fearing that India will try to take control of the western rivers.
7. Clearly, due to its strategic location and importance, Indus basin continues to receive considerable international attention. In fact, David Lilienthal, who headed Tennessee Valley Authority and later Atomic Energy Commission, after visiting India and Pakistan in 1951, feared that “another Korea is in making”, prompting World Bank to mediate water sharing arrangements.
8. Every now and then, there is a clamor in India for abrogating IWT as a response to Pakistan’s cross-border terrorism and intransigence. Any attempt towards this would require several politico-diplomatic and hydrological factors to be determined as also a political consensus. Treaty has remained “uninterrupted” is because India respects its signatory and values trans-boundary rivers as an important connector in region in terms of both diplomacy and economic prosperity. There have been several instances of terror attacks — Indian Parliament in 2001, Mumbai in 2008, and incidents in Uri in 2016 and Pulwama in 2019 — which could have prompted India, within Vienna Convention on Law of Treaties, to withdraw from IWT. However, on each occasion, India chose not to do so.

Renegotiation

9. With abrogation an option that India is hesitant to take, there is a growing debate to modify existing IWT. While the treaty may have served some purpose at the time it was signed, now with a new set of hydrological realities, advanced engineering methods in dam construction and de-siltation, there is an urgent need to look at it afresh.
10. Article XII of IWT says that it “may from time to time be modified” but carefully notes “by a duly ratified treaty concluded for that purpose between two governments”. Pakistan will see no merit in any modification having already got a good deal in 1960. India’s best option, therefore, would be to optimise the provisions of the treaty.
11. India has been woefully wanting in not utilising the 3.6 million acre feet (MAF) of “permissible storage capacity” granted by the IWT on western rivers. Poor water development projects have allowed 2-3 MAF of water to easily flow into Pakistan which needs to be urgently utilised. Further, out of total estimated capacity of 11406 MW electricity that can be harnessed from three western rivers in Kashmir, only 3034 MW has been tapped so far.

TOPIC 43. NORTH - SOUTH KOREA RELATIONS

1. Two years since North Korea and South Korea signed Pyongyang Joint Declaration on Sep 19, which focused on diffusing military tensions between the two countries, among other issues, Seoul and Pyongyang have found themselves in a diplomatic deadlock with no progress in denuclearisation talks between North Korea and the US.
2. While Pyongyang has made no mention of anniversary, Seoul has been looking to push for and renew cooperation. At Panmunjom, on the border between the two countries, South Korea's Unification minister Lee In-young urged North Korea to abide by the 2018 agreement, The Korea Herald reported.

What is the Pyongyang Joint Declaration?

3. Pyongyang Joint Declaration is an agreement signed by North Korea's leader Kim Jong Un and South Korea's President Moon Jae-in on September 18, 2018 during Inter-Korean Summit Meeting in Pyongyang. Some, although not all, long-standing issues between two countries were addressed in this agreement. The two sides agreed to implement the Panmunjom Declaration that had been signed in April that year and agreed to closer communication to prevent military clashes along the DMZ.
4. Economic cooperation was also a part of agenda, with both countries agreeing to normalize Gaeseong industrial complex located near the border and Mt. Geumgang Tourism Project, located in North Korean territory, that involved creating a special joint tourism zone. Two countries also agreed on cooperation in field of public health care, particularly in context of epidemics and implementation of emergency measures to prevent and control spread of contagious diseases.
5. For ordinary families separated following Korean War and division of peninsula, family reunions on both sides of border have a long-standing concern. The agreement made provisions for resolution of this issue with both countries agreeing to establishment of a permanent facility in Mt. Geumgang area, to enable separated families to meet and to create methods of communication between them through inter-Korean Red Cross initiatives.
6. At the time of the agreement, the two countries had also agreed to promote cultural exchanges and cooperation and had agreed to actively participate together in the 2020 Summer Olympic Games and other international games. There were also plans to bid for the two to jointly host the 2032 Summer Olympic Games.
7. The agreement also focussed on denuclearization of Korean Peninsula with North Korea agreeing to permanently dismantle Dongchang-ri missile engine test site and launch platform. At that time, Pyongyang had offered to implement additional measures, including permanent dismantlement of nuclear facilities in Yeongbyeon, North Korea.

What happened after the agreement was signed?

8. Days after the signing of the agreement, troops from North Korea and South Korea began clearing some of the approximately 800,000 landmines buried along their border, with plans to remove guard posts and weapons from the DMZ. Loudspeakers on South Korea's side that were used to blast anti-North Korean messages, propaganda and on occasion, K-pop songs, were also taken down.
9. In October 2018, the first meeting between North and South Korean officials took place at the Inter-Korean Liaison Office in Kaesong, that had been set up earlier that year to serve as a de facto embassy between the two countries, in absence of official diplomatic relations.

What has happened since Pyongyang Joint Declaration?

10. If 2018 seemed like year inter-Korean relations had improved, that began to change following DPRK-US Summit in Hanoi in 2019, when talks between Washington and Pyongyang abruptly fell through. Relations further deteriorated in summer of 2020, when Pyongyang started warning Seoul to prevent North Korean refugees and activists in South Korea from sending balloons, along with rice and anti-North Korea propaganda, across border into North Korea.
11. For Pyongyang, issue was more serious than may have originally appeared because refugees and activists have been engaging in these activities for years. Kim Yo Jong, sister of North Korea's leader and Kim Yong Chol, Vice Chair of Central Committee of ruling Workers' Party of Korea, had both singled out this issue according to state media outlets, hinting that relations between two countries would deteriorate if Seoul did not take any action.
12. Just days after these warnings had come from Pyongyang, North Korea blew up the Inter-Korean Liaison Office in Kaesong. Since January this past year, the building had been empty and there were no casualties.
13. Although there are no official confirmations from Pyongyang, experts say it is unlikely that North Korea has not been impacted by the Covid-19 pandemic. Ahead of the two-year anniversary of the agreement, South Korea's Unification minister Lee In-young called for cooperation between the two countries in dealing with the public health crisis. According to The Korea Herald, Lee said the South Korean government also has plans to resume suspended tours of Panmunjom and the DMZ Peace Trail and initiate the reunion of separated families.

TOPIC 44. BARBADOS

1. Queen Elizabeth II, who is the head of state in the UK and 15 other Commonwealth realms, including Canada, Australia and New Zealand, will be **dropped as monarch by Barbados next year**.
2. Before it celebrates its 55th anniversary of independence from British rule in November 2021, the prosperous West Indies nation will make history by becoming the first country in almost three decades to sever ties with the British royal family and become a republic; Mauritius being the last to do so in 1992.
3. Sandra Mason, the Governor-General of Barbados, said Tuesday in a speech written by Prime Minister Mia Mottley that “the time has come to fully leave our colonial past behind,” and announced that the country would be fully transitioning to a republican system. Mottley, who has been prime minister since 2018, is the first female to hold the post.

Why Barbados wants to become a republic?

4. After Barbados became independent in 1966 after 341 years of British rule, it chose to retain a formal link with the British royal family, as did other self-governing Commonwealth nations such as Canada and Australia.
5. However, the decision to not sever ties completely was not without controversy, and even the first prime minister of Barbados, Errol Barrow, said that the country should not “loiter on colonial premises”. In 1998, a constitutional review commission in the country recommended that Barbados become a republic. Before Prime Minister Mottley, the move was also championed by her predecessor Freundel Stuart.
6. So, this week’s announcement does not come as a surprise to Britain, and both the British royal family and the UK foreign ministry have reacted by saying that the decision was up to the people of Barbados.
7. The Caribbean nation is, however, expected to remain a member of the Commonwealth of Nations, the 54-nation club of mostly former British colonies which is led by the queen, and includes India.
8. The Governor-General of Barbados, who represents the Queen at formal events, said in the Tuesday speech on behalf of the nation’s ruling government, “Barbadians want a Barbadian Head of State. This is the ultimate statement of confidence in who we are and what we are capable of achieving. Hence, Barbados will take the next logical step toward full sovereignty and become a Republic by the time we celebrate our 55th Anniversary of Independence.”

What is the significance of the move?

9. When Barbados decided to retain the British monarch as head of state even after achieving independence, it was seen as a strategic move to maintain close ties with the United Kingdom.
10. However, many thought of the link as a lingering symbol of imperialism and racism—a view that seems to have become overwhelmingly popular today.
11. Experts have also said that move could have received an impetus thanks to the Black Lives Matter movement and its worldwide anti-racism protests after the death of George Floyd in the US in May.
12. In the Caribbean region, Barbados will now follow the lead of Guyana, who dropped the queen as head of state in 1970, Trinidad and Tobago in 1976 and Dominica in 1978.
13. The decision could also have an effect on Jamaica, whose prime minister has pledged to hold a referendum on the topic.

When the same royals were ‘Emperors’ of India?

14. When the British ruled India, the Queen’s family, known as the House of Windsor, held the title of ‘Emperor/Empress of India’ from 1876 when Victoria was the ruling monarch. The last person in the family styled as ‘Emperor’ of India was George VI, Queen Elizabeth II’s father.
15. The Windsors’ legal ties with India were severed after the country became a republic in 1950, but continued with Pakistan, which did not adopt its first constitution until 1956, and Elizabeth II officially served as the country’s ‘Queen’ for four years after her coronation in 1952.

TOPIC 45. LAC

The story so far:

1. On Tuesday, Defence Minister Rajnath Singh told Parliament that China had mobilised a large number of troops and armaments along the Line of Actual Control (LAC) with several friction areas in Eastern Ladakh including the north and south banks of Pangong Tso (lake). He said the amassing of troops went against the bilateral agreements of 1993 and 1996.

Why are there different perceptions?

2. Mr. Singh said there had been situations of prolonged stand-offs in the border areas with China in the past which had been resolved peacefully. He said the situation this year “is very different both in terms of scale of troops involved and the number of friction points...” This underscores the magnitude of the current situation along the disputed boundary in Eastern Ladakh. There is no commonly delineated LAC and Mr. Singh said India and China have different perceptions about the LAC. This has led to periodic tensions and the number of transgressions and face-offs went up as India’s border infrastructure improved and Indian Army patrols to the claim areas increased over the years. A series of boundary agreements have been signed and confidence-building measures (CBMs) carried out to maintain peace and tranquillity while the two sides attempted to delineate the boundary through Special Representatives.

What happens when agreements are flouted?

3. While the agreements remain in place, the recent massive mobilisation of troops, tanks, armoured carriers and air defences very close to the LAC is in violation of the terms. Since the Galwan Valley clash on June 15, the Army has empowered its local commanders to take appropriate action as situations unfold and recently shots have been fired in the air, the first on the LAC since 1975. Thousands of troops and armaments continue to be deployed in close proximity, in some places within a few hundred metres of each other, so the chances of an accidental or inadvertent escalation which can spiral into a major confrontation remain high. Mr. Singh said that in response to “China’s actions, our armed forces have also made appropriate counter-deployments in these areas to ensure that India’s borders are fully protected”.

What do the border agreements say?

4. A key element of both the 1993 and 1996 agreements is that the two sides would keep their forces in the areas along the LAC to a minimum level, Mr. Singh stated. However, the agreements do not define what comprises the minimum level. The 1996 agreement limits the deployment of major categories of armaments close to the LAC, including tanks, infantry combat vehicles, guns with 75-mm or bigger calibre, mortars with 120-mm or above and various missiles. It also limits combat aircraft from flying within 10 km of the LAC. It stipulates that neither side “shall open fire, cause bio-degradation, use hazardous chemicals, conduct blast operations or hunt with guns or explosives within two km” from the LAC.
5. Use of firearms on the LAC is strictly regulated as per the agreements of 1993, 1996 and 2005. The 1993 and 1996 agreements also mandate that pending a final solution to the boundary question, the two sides shall strictly respect the LAC. Further in these agreements, India and China committed themselves to clarification and confirmation of the LAC to reach a common understanding of the alignment. However, this process has made little progress since 2003. Both sides have so far exchanged maps only in the central sector, leading to overlapping claims at several points due to “differences in perception”.

How should troops deal with face-offs?

6. In 2012, India and China agreed to establish a Working Mechanism for Consultation and Coordination to “study ways and means to conduct and strengthen exchanges and cooperation between military personnel and establishments...in the border areas.” The 2013 Border Defence Cooperation Agreement lists several mechanisms to reduce misunderstandings and improve communication. Article VI of the agreement prohibits either side from tailing the patrols of the other “in areas where there is no common understanding of the line of actual control”.

What is the way forward?

7. Since the Galwan clash there have been calls for a review of the agreements from various quarters. Following the recent flare-up in tensions on the north and south banks of Pangong Tso, at recent meetings between the Defence and Foreign Ministers of the two countries in Moscow, both sides agreed that they shall abide by all the existing boundary agreements, maintain peace and tranquillity in the border areas and “avoid any action that could escalate matters”. The five-point plan agreed between External Affairs Minister S. Jaishankar and Chinese Foreign Minister Wang Yi in Moscow on September 10 states that “as the situation eases, the two sides should expedite work to conclude new CBMs to maintain and enhance peace and tranquillity in the border areas”.

TOPIC 46. TALIBAN

1. In the spring of 1996, the Taliban, who had taken southern Afghanistan under their control, organised a conference of their fighters, commanders and mullahs in downtown Kandahar. The city hosts one of the holiest shrines in the country —The Shrine of the Cloak of the Prophet Mohammed, which keeps a robe that Afghans believe was worn by the Prophet. Very rarely has it been shown to the public. Those who had assembled before an old mosque in central Kandahar were clueless what they were going to see. Then Mullah Mohammed Omar appeared on its roof, with the cloak in his hands. He held it aloft before the cheering crowd, who named him ‘Amir ul-Momineen’, the commander of the faithful.
2. Omar appeared with the relic at a critical juncture of the Taliban’s history. The militants had not reached Kabul yet. The rank and file were divided on whether the Taliban, consisting of mainly madrassa students, should take the war to the capital. But what happened in Kandahar, as Steve Coll wrote in his profile of the Taliban leader in *The New Yorker*, was Omar’s “coronation” as the leader of the most powerful insurgency in the country. The Taliban would capture Kabul within a few months and establish the Islamic Emirate of Afghanistan.
3. Omar would rule most of the country for the next five years. Overthrown by the U.S. in 2001 following the September 11 terrorist attacks, the Taliban would retreat to the mountainous hinterlands of Afghanistan, while their leadership crossed the border to Pakistan. The war continued, killing hundreds of thousands of people, and wounding and displacing many more. Almost 20 years after they lost Kabul, the Taliban are now controlling almost half of the country. Earlier this year, they reached an agreement with the U.S. as part of which American and other international troops would withdraw from Afghanistan in return for the Taliban’s assurance that they won’t let foreign terrorists use Afghan soil. As part of the broader peace process, Taliban representatives and the Afghan government opened formal talks earlier this month in the Qatari capital Doha where both sides would be seeking to build a consensus on how a post-American Afghanistan should be.

Civil war

4. The roots of the Taliban go back to the Mujahideen movement against the Soviet troops in Afghanistan in the 1980s. Many of the Taliban’s early leadership, including Omar, fought the Soviets with various Mujahideen factions, which were supported by the Central Intelligence Agency, Pakistan’s Inter Service Intelligence and Saudi Arabia. After the Soviets pulled back in 1989, the Mujahideen groups started fighting each other, plunging the country into a civil war.
5. The post-communist Afghanistan was divided along the ethnic lines. There was no central authority. Life was chaotic. Crimes were rampant. Afghanistan, which the poet Mohammed Iqbal called “the heart of Asia”, was falling apart. It was against this background a group of madrassa students (Talibs), with roots in Deobandi seminaries and support from different Deobandi factions in Pakistan, came together to launch a new “reform” movement. Predominantly Pashtun, their declared goals were: establish order, restore peace, disarm the militias, enforce the Sharia code and unite people under (their version of) Islam. They chose Omar, a young, locally influential preacher who lost one eye in the battle against the Red Army, as their leader.
6. There are lots of stories about how Omar mobilised the Talibs under his command. “The most credible story”, writes Ahmed Rashid in his book, *Taliban*, “is that in the spring of 1994, Singesar neighbours came to tell him that a commander had abducted two teenage girls.” They were taken to a military camp and repeatedly raped. Omar attacked the base with some 30 Talibs, freed the girls and hanged the commander from the barrel of a tank. From the base, they captured arms and ammunition, beginning a long journey of bloody militancy.
7. The Taliban swept up military victories with the help of the ISI. Pakistan found the Taliban the most reassuring proxy in an otherwise fractured Afghanistan. After capturing Kabul, the Taliban enforced their version of strict Islamist code. It destroyed movie theatres, banned women from working in public offices, kept girls out of schools and banned public music, the sale of CDs and even kite flying. Kabul’s sports stadium was turned into a public execution ground. In March 2001, the Taliban blew up the two giant stone statues of the Buddha in Bamiyan.
8. After the 9/11 terrorist attacks on the U.S., Omar faced a difficult choice. Osama bin Laden, the al-Qaeda leader, planned and executed the attack from Afghanistan. The U.S. asked the Taliban to hand over bin Laden. Omar refused, which was followed by the U.S. invasion and the ouster of the Taliban from power. Since then, the Taliban have been fighting to recapture what they lost — ‘the Islamic Emirate of Afghanistan’.

Fight and talk

9. In 2015, the Taliban announced that Mullah Omar died two years earlier in Pakistan. Mullah Mansour, who succeeded Omar, was killed in a U.S. air strike in 2015. Since 2016, the less-known Mawlawi Hibatullah Akhundzada has been the group’s leader. Under Akhundzada, the Taliban have taken a ‘fight and talk’ approach.

- In 2018, U.S. officials and Taliban representatives held their first meeting in Doha, where the insurgents had opened a political office. Throughout talks with the U.S., the Taliban refused to agree to a lasting ceasefire.
10. Pakistan played a key role in the Taliban's resurgence. Rattled by India's growing influence in post-Taliban Afghanistan, Pakistan played a double game — it joined the U.S.-led war on terror, while at the same time secretly helping the Taliban. As Steve Coll writes in his book *Directorate S*, the ISI set up a secret unit called 'Directorate S' to handle its Taliban operations and worked from an Army camp in Ojhri, near Rawalpindi.
11. Now, the war has entered into a stalemate. The Afghan government cannot defeat the Taliban and the Taliban seem unable, for now, to seize the major population centres, including Kabul. This, coupled with the U.S.'s desire to get out of the war, prompted the peace talks. But hard questions remain. With the U.S. agreeing to pull back, the Taliban have met one of their key goals. But they haven't recognised the Afghan Constitution. There is no truce yet. It's not clear what would their eventual goal be.
12. "There are some differences between the Taliban of the 1990s and today's Taliban. We now have the second generation Taliban. Their links with the military and religious establishment in Pakistan are different. Their working relationship with terrorist outfits like Al-Qaeda are limited today," said D. Suba Chandran, a Professor of strategic and security studies at the National Institute of Advanced Studies, Bangalore. "But their core ideology hasn't changed. If they were not ready to share power then, they won't do it now. I don't think their approach towards liberal institutions, minorities, women and other groups has changed either."

TOPIC 47. SHANGHAI COOPERATION ORGANISATION



1. The SCO was founded in June 2001, built on the 'Shanghai Five' grouping of Russia, China, Kazakhstan, Kyrgyzstan and Tajikistan
2. The platform played a key role in conflict resolution between China and Russia, and among Central Asian republics
3. India and Pakistan joined the SCO as observers in 2005, and were admitted as full members in 2015
4. As External Affairs Minister S. Jaishankar and Chinese State Councilor and Foreign Minister Wang Yi negotiated a five-point agreement which they hoped will lead to a disengagement process between Indian and Chinese troops ranged against each other at the Line of Actual Control (LAC), it wasn't just the host, Russia, that played a part behind the scenes. In fact, the occasion for their presence in Moscow, the Shanghai Cooperation Organisation (SCO), had as much of a role to play.
5. The SCO was founded in June 2001, built on the 'Shanghai Five' grouping of Russia, China, Kazakhstan, Kyrgyzstan (Kyrgyz Republic) and Tajikistan, which had come together in the post-Soviet era in 1996, in order to work on regional security, reduction of border troops, and terrorism. A particular goal all these years has been "conflict resolution", given its early successes between China and Russia, and then within the Central Asian Republics. The 1996 meeting of the Shanghai Five, for example, resulted in an 'Agreement on Confidence-Building in the Military Field Along the Border Areas' between China, Russia, Kazakhstan, Kyrgyzstan and Tajikistan, which led to an agreement on the mutual reduction of military forces on their common borders in 1997. Subsequently, it helped push the Central Asian countries to resolve some of their boundary disputes as well.
6. In 2001, the Shanghai Five inducted Uzbekistan into the group and named it the SCO, outlining its principles in a charter that promoted what was called the "Shanghai spirit" of cooperation.
7. According to its rules, the organisation has two permanent bodies — the SCO Secretariat based in Beijing and the Executive Committee of the Regional Anti-Terrorist Structure (RATS) based in Tashkent. The SCO Secretary-General and the Director of the Executive Committee of the SCO RATS are appointed by the Council of Heads of State for a term of three years. However, the venue of the SCO council meetings moves between the eight members (including India and Pakistan). The SCO also has four observer states — Afghanistan, Iran, Belarus and Mongolia — which may be inducted at a later date.

Main goals

8. The SCO describes its main goals, part of its Charter that was adopted in St. Petersburg in 2002, as: "strengthening mutual trust and neighbourliness among the member states; promoting their effective cooperation in politics, trade, economy, research and technology and culture, as well as in education, energy, transport, tourism, environmental protection, and other areas; making joint efforts to maintain and ensure peace, security and stability in the region; and moving towards the establishment of a democratic, fair and rational new international political and economic order."
9. No doubt, the SCO was eyed with some misgivings by the U.S. and Europe as a result of this, not the least by its desire to build a "new international political and economic order", and it was even dubbed the "Anti-NATO" for proposing military cooperation. In 2005, the Astana declaration called for SCO countries to work on a "joint SCO response to situations that threaten peace, security and stability in the region", indicating the group's strategic ambitions
10. Western and NATO concerns were heightened a decade later, when they placed heavy sanctions against Russia for its actions in Crimea, but China came to its aid, signing a 30-year, \$400 billion gas pipeline framework agreement. Since then, helped by the personal bond between Russian President Vladimir Putin and Chinese

President Xi Jinping, the SCO has become a platform for Eurasian cooperation in a region rich with energy resources. China's Belt and Road Initiative, which Russia is not a part of but supports, and is joined by all members of the SCO (with the exception of India), has also become a part of the SCO declarations.

Contradictions

11. India and Pakistan joined the SCO as observers in 2005, and were admitted as full members in 2015. Joining the SCO has been seen as one of the Modi government's more significant yet puzzling foreign policy choices, as it came at a time that New Delhi was looking more keenly at the West, and in particular at the maritime 'Quadrilateral' with the U.S., Japan and Australia. India has explained its membership in both ostensibly clashing groups as a part of its principles of "strategic autonomy and multi-alignment".
12. Other contradictions have also been noted. Since 2014, India and Pakistan have cut all ties, talks and trade with each other, and India has refused to attend the SAARC summit due to tensions with Pakistan, but both their leaderships have consistently attended all meetings of the SCO's three councils: the Heads of State, Heads of Government, Council of Foreign Ministers, as well as other meetings.
13. Despite the fact that India accuses Pakistan of perpetrating cross-border terrorism at every other multilateral forum, at the SCO, Indian and Pakistani armed forces even take part in military and anti-terrorism exercises together, as part of the SCO-Regional Anti-Terrorist Structure. In addition, the two countries are part of the SCO-Afghanistan Contact Group, to discuss the course of Afghanistan's future, an issue New Delhi and Islamabad are bitterly divided over.

Bilateral meetings

14. Through the years, SCO hosts have encouraged members to use the platform to discuss differences on the sidelines. In 2009, India and Pakistan held the first talks after the Mumbai attacks on the sidelines of the SCO summit in Astana, where then Prime Minister Manmohan Singh and former Pakistani President Asif Ali Zardari met, and in 2015, Prime Minister Narendra Modi met then Pakistani PM Nawaz Sharif at the SCO summit in Ufa, for a meeting that even resulted in a joint statement. There have been no bilateral meetings between Indian and Pakistani leaders on the sidelines of the SCO since then, and both sides have pointedly ignored the other in recent years, although the SCO secretary general has often expressed the hope they will resolve their issues through dialogue, including last year after the Pulwama attack.
15. Thus, it should not have come as a surprise that the SCO host, Russia, encouraged and facilitated meetings between the Defence Ministers of India and China (September 4) and Foreign Ministers of India and China (September 10) to discuss the stand-off at the LAC that has seen violent clashes, killings of soldiers and gun fire exchanges for the first time in 45 years.
16. "The SCO Charter doesn't allow any bilateral dispute to be taken up, but it provides a comfortable platform for building mutual trust, expanding cooperation, finding common ground and eventually, creating conditions for dialogue between countries," said Russian Deputy Ambassador to India Roman Babushkin in a press conference this week.
17. It remains to be seen whether the Moscow meeting between the Indian and Chinese Foreign Minister results in a real breakthrough on the ground at the Line of Actual control, where armies remain entrenched, and the PLA has mobilised both troops and heavy equipment. If it does, that would be a feather in the cap for the SCO, and if fails to do so, the SCO will no doubt continue to provide other venues for its disputing members to meet, as it seeks to build a continental coalition that, its founders hope, may one day be as strong as some of the other coalitions that exist to its west and south.

TOPIC 48. NORTHERN IRELAND

1. The spectre of Britain's cliff-edge exit from the EU — which has loomed large almost since the June 2016 referendum — has returned, months before the country's scheduled departure on December 31. But this is not the most significant feature of this week's controversial legislation, which aims to override the Irish protocol to the U.K.'s EU withdrawal agreement. With the new Bill, the government seeks to overwrite parts of the withdrawal agreement, which Prime Minister Boris Johnson struck with his 27 counterparts last October.
2. The agreement had sought to avoid a hard border coming up between Northern Ireland, which is part of the U.K., and the Irish Republic, an EU member. According to the Northern Ireland protocol, which is part of the agreement, the region is expected to follow some EU rules in trade with the Republic of Ireland. The new law, the Internal Market and Finances Bill, could override the legal force of the withdrawal agreement, which has triggered angry responses from Belfast.

Political integrity

3. A precise determination of the status of Northern Ireland after Britain's departure from the EU is most consequential at many levels. As a constituent territory of Britain, the region underpins the country's overall identity and constitutional and political integrity. Northern Ireland's relations with Great Britain and historical links with the Republic of Ireland to the south exert strong influence on the future of the tenuous peace that has prevailed across the island of Ireland since the 1998 Good Friday agreement. And, given the emerging geopolitical configuration after Britain's exit, the promotion of Dublin's interests within the EU are vital for the preservation of the centrepiece of European post-war integration, the lucrative single market. Ensuring the continuation of the existing soft border between the Republic of Ireland and Northern Ireland in the changed circumstances arising from Britain's exit from the bloc is thus paramount for overall stability.
4. To this end, London and Brussels initially negotiated a temporary Irish backstop in 2017-18 wherein, the whole of the U.K. would continue in the EU customs union until an alternative was in place. Neither the trade-only-in-goods that this arrangement implied, nor the severe limits on concluding trade pacts with third countries was palatable for both hard Brexiters and even pro-remain politicians across parties.
5. So contentious were the parliamentary debates over this withdrawal deal that three versions were defeated by massive margins in the House of Commons. The prolonged political turmoil pushed Britain's EU exit deadlines at least thrice and eventually forced former Prime Minister Theresa May to step down in June 2019.

Alternative plan

6. Mr. Johnson's alternative to the backstop was the establishment of customs checks on the Irish Sea to regulate the flow of goods in and out of Great Britain from Northern Ireland and vice versa. Dublin would have the best of both worlds, being brought under dual jurisdiction of the EU and the U.K. to safeguard Britain's constitutional integrity and sovereignty, as also that of the European single market. Following the massive majority Mr. Johnson secured in the December 2020 general election, which was evidently a vote for Brexit, any dissenting voice from Northern Ireland's hard-line Democratic Unionist Party were muted.
7. The government now claims it was unaware of the onerous provisions in the Irish protocol requiring close regulatory alignment with the EU when the withdrawal deal was sealed during the tumultuous atmosphere in January. Accordingly, the amendments to the protocol tabled in the internal market Bill this week seek to empower authorities to sidestep EU jurisdiction in the areas of customs and state subsidies for industries. Mr. Johnson has defended the move as necessary to protect the country from external dangers.
8. Although the government has refused to retract modifications to the Irish protocol, it is likely that this was an act of brinkmanship on the part of Mr. Johnson. The legislation could well be another ploy to secure relaxations on EU demands for greater access to Britain's fisheries market. But then the present government is dominated by members who strongly back Brexit even without a deal.

TOPIC 49. MAGAWA



1. On Friday, a rat called Magawa was awarded the PDSA Gold Medal for his “life-saving” work in Cambodia. Magawa who is an African Giant Pouched Rat and is just under eight years old, is the first rat to win this medal and was given the award by PDSA’s Director-General in a virtual presentation.
2. PDSA was founded in 1917 by animal welfare pioneer Maria Dickin and is one of the UK’s leading veterinary charities. It operates through 48 pet hospitals across the UK and provides low cost and free veterinary care to sick and injured pets.

What is the PDSA Gold Medal?

3. The PDSA Gold Medal was initiated in 2002 and rewards civilian acts of animal bravery and “devotion to duty”. It is the highest honour recognising extraordinary bravery of animals.
4. “Heroes come in all shapes and sizes. Animals sometimes display heroic capabilities in extraordinary situations. The PDSA Gold Medal recognises this,” the PDSA website mentions. The medal has been awarded to over 30 animals so far. All other recipients are dogs.
5. Last year, a police dog called Bacca was given the award. In 2018, Bacca had helped chase down an assailant who smashed windows and acted violently at Bromyard in the UK. Bacca received eight wounds to his head and neck in the process.

Why was it awarded to Magawa this year?

6. Since the early 1990s, a charity called APOPO has been training rats to detect landmines in Tanzania. It is estimated that over 80 million landmines are active and unknown across the world. While the African Giant Pouched Rat is much larger than the usual pet rats, but it is still light enough to not trigger a landmine by walking over it. Rats like Magawa and others whose official job title is “HeroRAT” are considered easy to train.
7. According to PDSA, Magawa has been at work in Cambodia – which has the highest number of mine amputees per capita in the world at over 40,000 people– since over seven years and can search an area the size of a tennis court in about 30 minutes, something that would take a human with a metal detector over four days.
8. If the rats detect a landmine underneath because of the chemicals used, it signals to their handler, after which it is safely disposed of. Till now, Magawa has discovered over 39 landmines and 28 items of unexploded ordnance to date and has cleared over 141,000 sq. meters of land (equivalent to the size of two football pitches), which makes him the charity’s most successful HeroRAT.

TOPIC 50. WHALES



1. Since Monday, over 450 long-finned pilot whales have died in Australia in what is being called the biggest stranding of whales on record in Australia. The whales were beached at a remote beach in Tasmania's west coast.

Why do whales beach themselves?

2. Whales are known to strand themselves on beaches across the world and they do so singularly or in groups. While individual strandings are mostly attributed to injury or sickness, it is not clear why exactly whales beach themselves in groups.
3. Even so, there are a few theories that might explain this behaviour. One reason could be that some whales follow schooling fish or other prey into shallow waters, which causes the whales to become disoriented, as a result of which they get stranded. Another reason could be panic from being trapped by a predator such as killer whales or sharks. Another possibility is that whales might be drawn to land by prey-rich currents. Further, the shape of the beach and the coastline could also have a role to play. For instance, if the beach has gently-sloping shorelines, whales that are dependent on echolocation for navigation can be deceived.
4. According to Australia's Department of Agriculture, Water and the Environment, the species that most often get stranded on Australian beaches are those that use echolocation or sonar for navigation, such as pilot and sperm whales.

What happens when whales are stranded?

5. According to a press release issued by Tasmania's Department of Primary Industries, Parks, Water and Environment, from an aerial survey, most of the stranded whales appear to be dead. To save the ones that are still alive, scientists and workers involved in the rescue mission try to drag the whales away from the shore and guide them back into the water.

Are such strandings common?

6. Whale stranding is neither an uncommon nor a recent phenomenon. While dead individuals would naturally wash up ashore, mass beaching has baffled humans since at least 300 BC. "It is not known why they sometimes run aground on the seashore," noted Aristotle. "It is asserted that this happens when the fancy takes them and without any apparent reason." Centuries later, the Romans thought stranding was a whale's punishment for offending Neptune, the god of the seas.
7. Before this, the largest stranding that has occurred in Tasmania happened in 1935 when over 294 whales were stranded. This stranding also involved long-finned pilot whales.

TOPIC 51. MT EVEREST



1. Almost a year after China and Nepal together decided to re-measure elevation of world's highest mountain, the two countries are soon expected to announce its latest official height, the Nepali Times reported.
2. Mount Everest or Sagarmatha, Earth's highest mountain above sea level, is located in the Himalayas between China and Nepal — the border between them running across its summit point. Its current official elevation – 8,848m – places it more than 200m above the world's second-highest mountain, K2, which is 8,611m tall and located in Pakistan-occupied Kashmir.
3. The mountain gets its English name from Sir George Everest, a colonial-era geographer who served as Surveyor General of India in the mid-19th century. Considered an elite climbing destination, Everest was first scaled in 1953 by the Indian-Nepalese Tenzing Norgay and New Zealander Edmund Hillary.

Why is the height being measured again?

4. Everest's current official height – 8,848m – has been widely accepted since 1956, when the figure was measured by the Survey of India. The height of the summit, however, is known to change because of tectonic activity, such as the 2015 Nepal earthquake. Its measurement over the decades has also depended on who was surveying.
5. Another debate is whether the height should be based on the highest rock point or the highest snow point. For years, Nepal and China disagreed over the issue, which was resolved in 2010 when China accepted Nepal's claim of the snow height being 8,848m, while the Nepali side recognised the Chinese claim of the rock height at 8,844.43m.
6. Then in 2019, when Chinese President Xi Jinping visited Nepal, the two countries agreed to remeasure Everest's height and announce the findings together.
7. According to the Nepali Times, a reason behind the joint effort is that previous measurements of the mountain were by Indian, American or European surveyors, and that the joint effort represents national pride for Nepal and China who will now come up with their own figure.
8. A team from Nepal completed its task last year, and China carried out its expedition in May 2020, amid coronavirus pandemic. Both teams are using different points of reference for sea level – China using Yellow sea and Nepal using a point close to Bay of Bengal coast, the Nepali Times report said.
9. The report also said that Nepal has completed its calculations, and is waiting for China to complete its part of task. A date for the joint announcement has been pushed back because of the pandemic.

Everest's first survey

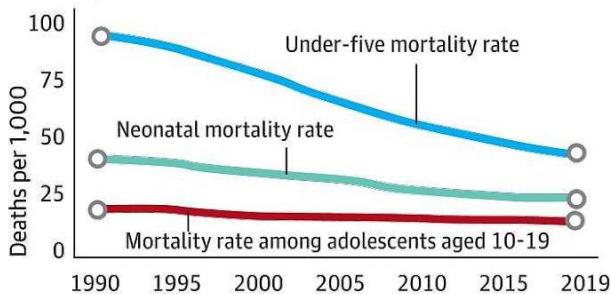
10. The mission to measure the world's highest peak was taken up on a serious note in 1847, and culminated with the finding of a team led by Andrew Waugh of the Royal Surveyor General of India. The team discovered that 'Peak 15' — as Mt Everest was referred to then — was the highest mountain, contrary to the then prevailing belief that Mt Kanchenjunga (8,582 m) was the highest peak in the world.
11. Another belief, prevailing even today, is that 8,840 m is not the height that was actually determined by the 19th-century team. It is widely believed that Waugh and his team actually measured the peak at 29,000 feet — which works out to 8,839 m — but were worried that 29,000 feet would not convince people that it was authentic. And so, according to reports that have endured, the team added 2 ft to make it look more convincing. That makes it 29,002 ft, which converts into 8,840 m.
12. In any case, officials say, the Nepal government does not have any record or authentic version of that survey, as it was done by the Surveyor General of India's office during the British Raj. That survey, based on trigonometric calculations, is known as the Great Trigonometric Survey of India.

FACT 1. CHILD MORTALITY

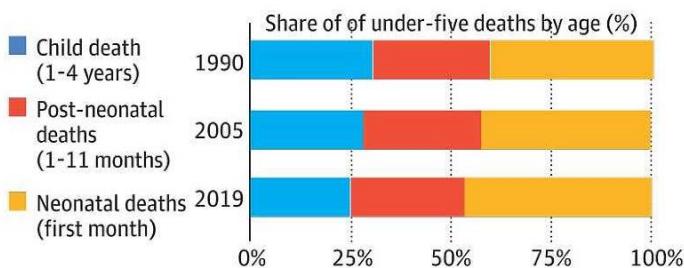
Lower child mortality

Though about 20,000 children die every day across the world, mostly of preventable or treatable causes, the UN's global child mortality estimates are much lower today than before. There are wide geographical disparities with Africa and South Asia bearing a greater share of the burden. Recent studies show that this rapid improvement could slow down due to service disruptions related to COVID-19

RAPID PROGRESS | Global under-five mortality dropped from 93 deaths per 1,000 live births to 38 deaths in 2019. Neonatal mortality reduced from 36.6 deaths per 1,000 to 17.5 deaths



NEONATAL RISK | The rate of decline in neonatal mortality has been slower than that of under-five mortality. So, the share of neonatal deaths among under-five deaths increased from 40% in 1990 to 47% in 2019

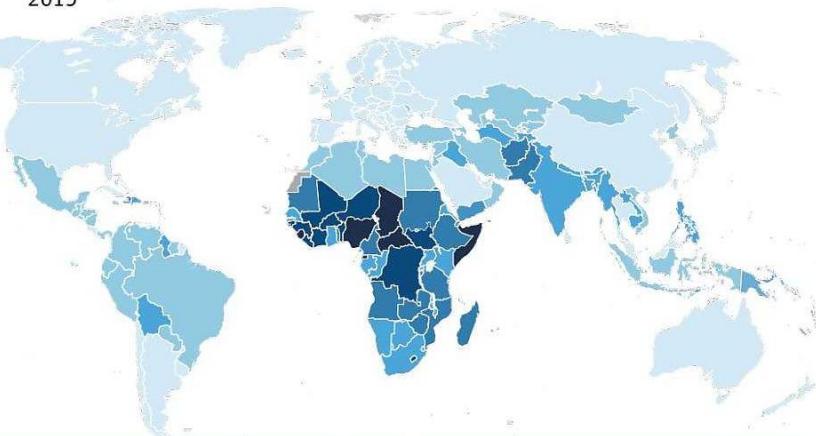


GEOGRAPHICAL DISPARITIES REMAIN

More than 80% of under-five deaths occurred in Sub-Saharan Africa and South Asia in 2019. The map shows the under-five mortality rate in 2019. The darker the shade, the higher the mortality. In India, under-five mortality stood at 34.3 deaths per 1,000 live births. Nigeria has the highest under-five mortality rate (117 deaths per 1,000 births)

Under-five mortality rate (deaths per 1,000 live births)

- >100
- 75-100
- 50-75
- 25-50
- 10-25
- ≤10
- No data



COVID-19 threat | There is evidence across the world that the pandemic has disrupted several essential services such as access to healthcare and immunisation. A recent paper* published in The Lancet estimates that the number of under-five child deaths will increase by 2.5 lakh-11.5 lakh in 118 low-income and middle-income countries if disruptions (reduction of workforce, reduction of services, etc.) continue for six months

Source: World Bank Data Blogs, *Early estimates of the indirect effects..., Timothy Roberton et al, The Lancet

FACT 2. INFRASTRUCTURE

432 infra projects show cost overruns of ₹4.29 lakh crore

As many as 432 infrastructure projects have been hit by cost overruns of over Rs 4.29 lakh crore owing to delays and other reasons, the MoSPI report for July 2020 said

₹20,58,193.26 crore:

Total original cost of implementation of the 1,683 projects

₹24,87,361.54 crore:

Anticipated cost of implementation of all projects

₹11,51,222.81 crore:

Expenditure incurred on all projects till June 2020, 46.28 per cent of anticipated cost

505 Number of projects that reported time escalation, of which:

- **120**: delayed by one to 12 months
- **118**: delayed by 13 to 24 months
- **157**: delayed by 25 to 60 months
- **110**: delayed by 61 months and above
- **43.49** months: Average time overrun of all projects

1,670: TOTAL PROJECTS WORTH RS 150 CRORE AND ABOVE MONITORED BY THE MINISTRY OF STATISTICS AND PROGRAMME IMPLEMENTATION (MoSPI)

945: PROJECTS WHOSE NEITHER YEAR OF COMMISSIONING NOR TENTATIVE GESTATION PERIOD HAS BEEN REPORTED



₹4,29,168.28 CRORE:
OVERALL COST OVERRUNS, I.E. 20.85 PER CENT OF ORIGINAL COST

Reasons for time overruns, as reported by implementing agencies:

- Delays in land acquisition, forest clearance and supply of equipment
- Geological surprises
- Fund constraints
- Geo-mining conditions
- Slow progress in civil works
- Shortage of labour
- Inadequate mobilisation by contractor
- ROU/ROW (right of use/right of way) problems

Source:
MoSPI/PTI

FACT 3. ELECTRIC VEHICLES

'EV penetration in PVs, CVs to stay low in medium-term'

Penetration of electric vehicles (EVs) will remain low in medium-term in passenger vehicle (PV) and commercial vehicle (CV) segments, an Icra report said

Investment in vendor systems needed:

EV vendor systems need substantial investments to keep costs under check and reduce dependence on imported electronic systems

Vehicle finance another challenge:

Modality of vehicle financing in a battery-swappable model, where core battery is owned/leased by a third party and financiers only have control over residual vehicle, is another challenge

8-10% Expected share of EVs in new vehicle sales in two-wheeler and



Intra-city buses in next 5 years

Why this is important: EV prices higher than internal combustion engine vehicles and lack of public charging infrastructure has resulted in minimal EV penetration

Source: Icra/PTI

FACT 4. EDUCATION

Course preference

Engineering continues to be the most popular professional course in the country, according to a recently released report*, with southern States recording the highest takers for the course. However, vocational studies was preferred over engineering by male students in rural areas. A higher share of women preferred medicine, compared to males.

By The Hindu Data Team

ALL-INDIA COURSE-WISE % SPLIT OF STUDENTS PURSUING TECHNICAL/PROFESSIONAL COURSES^

OBSERVATIONS | The table below shows that one in two urban males pursued engineering, while in rural areas a higher share of males were enrolled in vocational studies compared to engineering. Among female students, medicine was the second-most popular after engineering. In the southern States, except in Kerala, and the industrialised States of Maharashtra and Gujarat, a high proportion of students were enrolled in engineering. Vocational courses saw a higher share of takers in States such as Bihar, Jharkhand, Haryana, Uttar Pradesh and Rajasthan. Jammu and Kashmir had the highest share of students pursuing medicine, with Rajasthan at a distant second

Type	Engineering	Vocational studies	Medicine
Males	41.5	20	4.9
Urban males	51.5	11	5.9
Rural males	30.1	30.3	3.8
Females	28.1	6.4	13.7
Urban females	33.5	3.7	16.7
Rural females	20	10.3	9.1
All-India	36.9	15.2	7.9
Urban areas	44.8	8.3	9.9
Rural areas	26.8	24	5.5

COURSE-WISE % SPLIT OF STUDENTS PURSUING TECHNICAL/PROFESSIONAL COURSES IN MAJOR STATES^

State	Engineering	Vocational studies	Medicine
J&K	15.1	9.5	34.8
Himachal	11.8	30.9	10.7
Punjab	30.9	11.6	6.9
Delhi	27.9	2.4	6.7
Haryana	20.4	29.6	10.5
Uttarakhand	25.6	24.1	9.9
U.P.	22.2	16	5.3
W.B.	26.2	9.3	10.2
Jharkhand	20	37.7	8.8
Bihar	6.1	58	1.3
Odisha	32	17.5	2.5
Rajasthan	16.6	19.9	18.5
Gujarat	38.7	19	6.8
Maharashtra	46.2	11	7.5
Chhattisgarh	35	7.7	6.7
M.P.	26.9	16.3	4.9
A.P.	55	10	4.3
T.N.	58.2	8.2	8.2
Telangana	56.1	8.8	6.9
Karnataka	48	21.1	5.9
Kerala	23.7	15.5	11.6

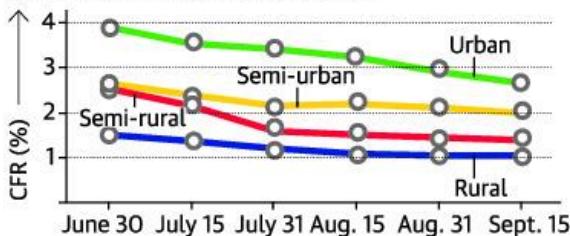
* Household social consumption on education in India (July 2017 - July 2018). | ^Other professional courses not considered

FACT 5. FATALITY RATE

Rural deviation

India's COVID-19 Case Fatality Rate (CFR) has been on a decline. The country's CFR (deaths/cases) reduced from 2.97% on June 30 to 1.64% on September 15. One reason could be the fact that, despite a rapid rise in rural cases in recent months, a similar increase in rural deaths was not observed. Is the CFR lower in rural areas as the share of population with co-morbidities is lower compared to urban areas? A district-wise analysis shows that this is not necessarily so. The relation between CFR and diabetes prevalence in rural areas is mild and somewhat negatively correlated. This lends credence to the argument that there is more to low CFR in rural areas, perhaps explained by lower reporting of deaths. By **The Hindu Data Team**

1. PERSISTENTLY LOW RURAL CFR | The CFR in rural and semi-rural districts has always remained lower than in urban and semi-urban districts. Notably, despite a case surge in rural areas in August and September, the rural CFR continued to remain low

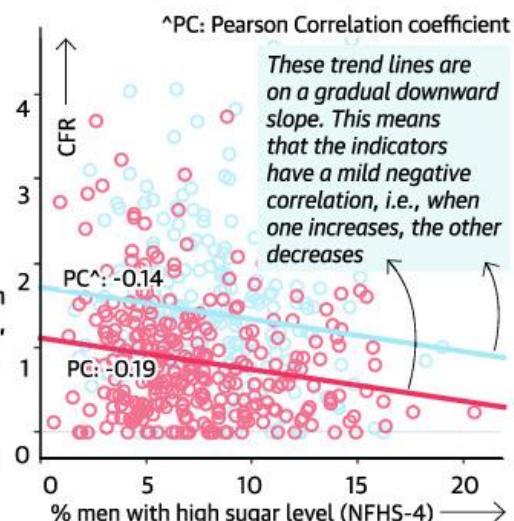


2. LOWER RURAL CO-MORBIDITIES | The share of male population* with co-morbidities such as diabetes and hypertension is higher in urban areas than rural areas, data from NFHS-4 (2015-16) show

Co-morbidities among men*	Urban	Rural
Hypertension - slightly above normal	11.4	9.8
Hypertension - very high	1	0.8
Blood sugar level - high	8.8	7.4
Blood sugar level - very high	4.4	3.5

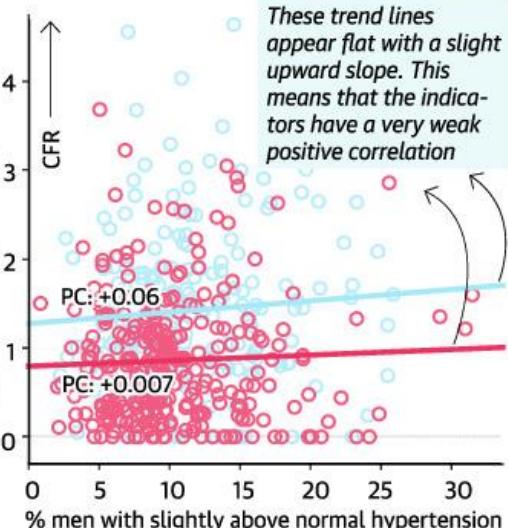
3. RELATIVE TO DIABETES

| The chart plots the % of men with high blood sugar levels against the CFR in rural (●) and semi-rural (○) districts. There is a mild negative correlation between the indicators. Thus, counter-intuitively, the CFR was in fact lower in many districts where the % of men with high sugar levels was higher



4. RELATIVE TO HYPERTENSION

| The chart plots the % of men with 'slightly above normal' hypertension levels against the CFR in rural and semi-rural districts. There is a very weak positive correlation between the two indicators, showing that the CFR is not necessarily linked to prevalence of hypertension



*Since the combined indicator was unavailable with the NFHS, numbers for men were chosen for representation. However, a similar analysis for women concurred with the above conclusions. Analysis was also done for varying levels of sugar and BP and gave similar results

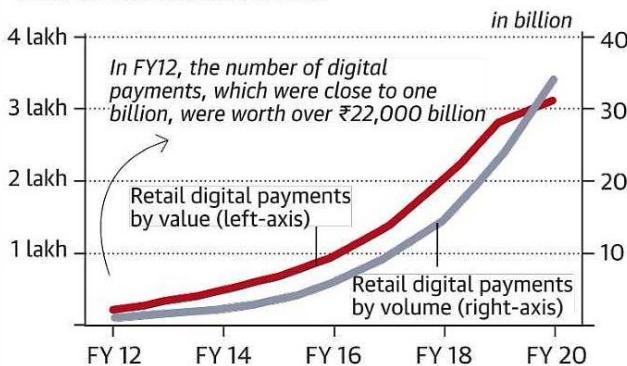
FACT 6. CYBER FRAUD

More cards, more fraud

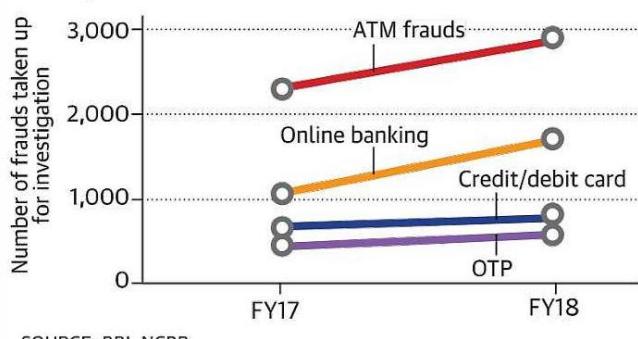
While the use of digital systems (credit cards, debit cards and national electronic funds transfers) has risen significantly, there has also been a concomitant increase in cyberfraud targeting digital users. Conviction rates for cyberfraud have been low. The complexity of the crimes committed could be a reason.

By Vignesh Radhakrishnan, Sumant Sen and Naresh Singaravelu

1. DIGITAL RISE | In FY20, the number of new retail digital payments breached the 30 billion mark and the value of such transactions went past the ₹3 lakh billion mark for the first time in India



2. FRAUDS RISE | In FY18, 6,885 cases of cyberfraud were taken up for investigation, a 35% increase from the previous year. Frauds related to online banking recorded the highest increase of 62%



SOURCE: RBI, NCRB

3. RARE CONVICTIONS | At the end of FY18, about 64% cases were pending police investigation; only 16.2% of OTP frauds were chargesheeted. Also, 95.9% cases were pending in courts; not one case ended in a conviction

Fraud type	Police charge sheeting rate	Police Investigation pendency rate	Court conviction rate	Court case pendency rate
Credit/debit card	32.1%	65.8%	0%	97.9%
ATM	42.1%	64.8%	16.7%	97.1%
Online banking	30.3%	66.3%	0%	96.2%
OTP	16.2%	64.2%	0%	95.9%
All	35.6%	65.5%	14%	96.2%

4. CASH IS STILL THE KING | While digital payments have increased, cash continues to be the most preferred mode of transaction. The currency in circulation to GDP ratio increased to its pre-demonetisation level of 12% in FY20 from 11.3% a year ago

