

VEDHIK
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ANALYSIS

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FOREWORD

We, at Team Vedhik is happy to introduce a new initiative - "Daily Current Affairs_The Hindu" compilations to help you with UPSC Civil Services Examination preparation. We believe this initiative - "Daily Current Affairs_The Hindu" would help students, especially beginners save time and streamline their preparations with regard to Current Affairs. A content page and an Appendix has been added segregating and mapping the content to the syllabus.

It is an appreciable efforts by Vedhik IAS Academy helping aspirants of UPSC Civil Services Examinations. I would like to express my sincere gratitude to Dr. Babu Sebastian, former VC - MG University in extending all support to this endeavour. Finally I also extend my thanks to thank Ms. Shilpa Sasidharan and Mr. Shahul Hameed for their assistance in the preparing the compilations.

We welcome your valuable comments so that further improvement may be made in the forthcoming material. We look forward to feedback, comments and suggestions on how to improve and add value for students. Every care has been taken to avoid typing errors and if any reader comes across any such error, the authors shall feel obliged if they are informed at their Email ID.

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India extends \$900 mn aid to Sri Lanka

It includes a \$400 mn currency swap and deferred payment of \$500 mn

MEERA SRINIVASAN
COLOMBO

India on Thursday confirmed a \$400 million currency swap with Sri Lanka while deferring another \$500 million due for settlement to the Asian Clearing Union (ACU), in a move aimed at helping the island nation witnessing an unprecedented economic crisis.

In a tweet on Thursday, the Indian mission in Colombo said High Commissioner Gopal Baglay met Central Bank Governor Ajith Nivard Cabraal and expressed “India’s strong support to Sri Lanka” in the wake of the Reserve Bank of India extending facilities of \$900 million over the last week.

“Had an excellent discussion with Indian High Commissioner to #SriLanka HE Gopal Baglay at my office this morning where he confirmed the #SAARC #SWAP

by RBI and other forms of bilateral cooperation,” Mr. Cabraal said in a tweet.

India’s assistance follows a request from Sri Lanka during Finance Minister Basil Rajapaksa’s visit to New Delhi in December, for emergency financial assistance, including Lines of Credit for importing essentials and a currency swap to boost Sri Lanka’s draining foreign reserves. Sri Lanka is facing a severe dollar crunch that economists say might lead to a default on external debt and create a food shortage in the imports-reliant nation. Colombo must service over \$7 billion outstanding debt in 2022, including bond repayments of \$500 million in January and \$1 billion in July.

The Central Bank of Sri Lanka has expressed confidence about paying off the foreign debt. Ruling out an IMF bailout, Governor Ca-

braal on Wednesday said Colombo is in talks with Beijing for a new loan, in addition to the \$500 million loan and \$1.5 billion currency swap extended by Beijing as pandemic-time support. The request, according to local media reports, was also discussed during Chinese Foreign Minister Wang Yi’s visit to Colombo last week. Sri Lanka owes China over \$5 billion already, and Colombo has requested Beijing to restructure it to provide some relief.

The developments have prompted political commentators in Sri Lanka to pit India and China against each other, in providing timely assistance to the island nation.

In July 2020, the RBI extended a similar swap facility – of \$400 million – to help Sri Lanka cope with the impact of the first wave of the pandemic, and later provid-

ed a three-month roll over until February 2021, when the Central Bank of Sri Lanka settled it.

Thursday’s announcement on RBI assistance includes deferring the payment of \$500 that Sri Lanka owes to the ACU, a regional initiative with the Central Banks and Monetary Authorities of Bangladesh, Bhutan, India, Iran, Maldives, Myanmar, Nepal, Pakistan and Sri Lanka.

Significantly, India’s confirmation of the swap comes a week after the two countries signed a long-pending agreement on jointly developing the strategically located Trincomalee oil tank farm along the north-eastern coast of the island. Diplomatic sources had earlier indicated that any financial support from New Delhi to Colombo would have to follow the signing of the deal.

U.S. denounces China's maritime claims

The State Department asks China 'to cease its unlawful and coercive activities in the South China Sea'

AGENCE FRANCE-PRESSE
WASHINGTON

The U.S. on Wednesday laid out its most detailed case yet against Beijing's "unlawful" claims in the South China Sea, rejecting both the geographic and historic bases for its vast, divisive map.

In a 47-page research paper, the State Department's Bureau of Oceans and International Environmental and Scientific Affairs said China had no basis under international law for claims that have put Beijing on a collision course with the Philippines, Vietnam and other Southeast Asian nations.

"The overall effect of these maritime claims is that the PRC unlawfully claims sovereignty or some form of exclusive jurisdiction over most of the South China Sea," the paper said, referring to the People's Republic of China.



Rising tensions: A file photo of Chinese vessels anchored at Whitsun Reef in the disputed South China Sea. • AFP

"These claims gravely undermine the rule of law in the oceans and numerous universally recognized provisions of international law reflected in the Convention," it said, referring to a 1982 UN treaty on the law of the sea ratified by China – but not the U.S.

Releasing the study, a

State Department statement called again on Beijing "to cease its unlawful and coercive activities in the South China Sea."

China hit back on Thursday, claiming the report "distorts international law and misleads the public."

"The U.S. refuses to sign the treaty but portrays itself

as a judge and wantonly distorts the treaty," said Foreign Ministry spokesman Wang Wenbin at a briefing. "In seeking its own selfish interests it uses multiple standards to carry out political manipulation." The paper is an update of a 2014 study that similarly disputed the so-called "nine-dash line" that forms the basis for much of Beijing's stance.

International ruling

In 2016, an international court sided with the Philippines in its complaints over China's claims.

Beijing replied by offering new justifications, including saying that China had "historic rights" over the area.

The State Department paper said that such historical-based claims had "no legal basis" and that China had not offered specifics.

It also took issue with geo-

graphic justifications for China's claims, saying that more than 100 features Beijing highlights in the South China Sea are submerged by water during high tide and therefore are "beyond the lawful limits of any state's territorial sea."

Beijing cites such geographic features to claim four "island groups," which the State Department study said did not meet criteria for baselines under the UN convention. The report was issued as the U.S. increasingly challenges China on the global stage, identifying the rising communist power as its chief long-term threat.

The South China Sea is home to valuable oil and gas deposits and shipping lanes, and Beijing's neighbours have frequently voiced concern that their giant neighbour was seeking to expand its reach.

An epidemiologically sound testing strategy

India's latest COVID-19 advisory shifts the pandemic response from 'treatment oriented' to one focused on public health



CHANDRAKANT LAHARIYA

On January 10, 2022, the Indian Council of Medical Research released an 'Advisory on Purposive Testing Strategy for COVID-19 in India'. The advisory (Version VII; <https://bit.ly/31Utj7F>) provides details on 'Who may be' and 'People who need not to be' tested. It proposes that 'asymptomatic individuals in community setting' and 'contacts of confirmed cases of COVID-19, unless identified as high risk', amongst others, need not be tested. The latest COVID-19 testing strategy replaces the previous advisory (Version VI), released on September 4, 2020 (<https://bit.ly/3GsAexi>) and *inter alia*, had the provision of COVID-19 testing on demand for 'all individuals who wish to get themselves tested'. Clearly, there are a few paradigm shifts in the testing strategy.

Understandably, the revised strategy has now created a flutter and divided epidemiologists and clinicians, pandemic 'experts' and television channel commentators, in two halves – of those strongly supporting or vehemently opposing it. So, is the new advisory on COVID-19 testing a right approach? Let us deep dive.

Strategies in sync with stages

When the novel coronavirus pandemic began, the virus was new to any setting and every country including India followed a 'containment strategy' to stop the virus spread and prevent community transmission. This required aggressive testing to detect every infection and 'trace and test' every possible contact of confirmed cases. 'Test, test and test' – as it was colloquially referred to – was an approach recommended and followed by all countries across the world. India, following this ap-

proach, ramped up COVID-19 testing capacity and two years on, India has set up nearly 3,100 laboratories conducting COVID-19 testing with daily capacity of nearly two million RT-PCR tests. Over the last many months, additional testing approaches and kits such as rapid antigen test (RAT) and home kits for antigen test have been approved.

The aggressive testing approach seems to have worked – to a large extent and till recently. Yet, no country can claim that it has detected every COVID-19 infection. A few high income countries are estimated to have identified one in every two or three infections. In India, based on the fourth round of the COVID-19 national sero survey between June 2021 and July 2021, only one in every 30 infections has been detected. Clearly, an aggressive testing strategy was useful but not enough.

The emergence of Omicron (B.1.1.529) as a variant of concern now has changed the situation drastically. So there is Omicron, with a three- to four-fold higher transmissibility (when compared to the Delta variant) and also a large majority of new infections being asymptomatic. Along with very high new infections in a short period of time, the testing capacity in nearly all countries has been stretched. Countries are revising testing strategies, mostly with the focus on ramping up testing with the use of RATs and home testing kits. The approaches for other public health tools such as contact tracing, isolation and quarantine are also being reviewed and revised.

Testing with purpose

Any diagnostic testing – especially in outbreaks, epidemics or pandemics – has two broad objectives: of individual and public health benefits and tracking the extent of infection. At the individual level, early COVID-19 testing can help in a suitable modification in clinical management. However, with a decoupling of 'infection' from 'moderate to severe CO-



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VID-19' and a better understanding of disease epidemiology, it is known that for most asymptomatic or even mild symptomatic individuals (i.e., fully vaccinated, young adults, or those without comorbidities), a confirmatory COVID-19 testing would not alter the treatment. Therefore, testing asymptomatic or majority of mild symptomatic would burden the laboratory capacity with almost no individual benefit in treatment.

Second, the testing of asymptomatic cases would have the public health benefit of reducing transmission (if every infection can be detected at the earliest). However, with Omicron, it is neither feasible for any system nor required as transmission is already widespread and a majority cases are asymptomatic. As the COVID-19 testing capacity has been overwhelmed in even high resource health-care systems, countries are resorting to expanding RATs. However, with the low sensitivity of RAT kits, in a hypothetical scenario of even every infected individual undergoing a COVID-19 test, nearly half of them will be missed. Clearly, at this stage of pandemic, the individual and public health benefits of testing contacts and asymptomatic individuals are very limited, if not zero.

Promoting the use of self-purchased RATs has an equity dimension as well. This is in addition to it not being a very effective public health tool. A ramping up of RATs may be useful in a setting where every member of society has equal access by free of cost availability to such kits. However, in India, as per the Government announcement, 800 million Indians are eligible

and dependent on free ration during the pandemic; they cannot be expected to purchase testing kits and are not likely to use them. Therefore, promoting RAT kits is unlikely to be a solution in India as well as in many other low and middle income countries.

In public health challenges such as the ongoing COVID-19 pandemic, every health intervention should be deployed to offer the maximum benefits to most citizens. The available laboratory capacity and the testing kits need to be used efficiently, optimally and intelligently. Testing asymptomatic people has a very limited marginal benefit and can overburden an already stretched testing system – which could essentially mean a delay in the COVID-19 test report for those with a high risk of getting moderate to severe disease.

Finally, the argument that testing should be ramped up to get better COVID-19 data is on weak footing. We need to remember that any data collection is a byproduct of public health interventions and not the primary objective. If we can use data being generated currently, even that would be enough to answer most policy questions and guide interventions. Then, in the end, in every country across the world, the final numbers of the pandemic will always be determined by the estimates.

A right epidemiological move

The public health tools need to be suitably modified and calibrated at every stage of the pandemic. Two years into the pandemic, there is limited relevance of continuing with the same old strategies for contact tracing, testing and isolation.

India's pandemic response has received criticism for being guided by clinical experts and being medical care-oriented with excessive attention on hospital beds and intensive care unit facilities and with a focus on care of the sick. The recent advisory on COVID-19 testing is a hint towards a shift toward the public health approach. There appears to be more attention on a

pandemic response guided by local epidemiology and the principles of public health. In addition to testing strategy, in the recent weeks, COVID-19 home isolation guidelines and hospital discharge policies have also been revised.

COVID-19 testing has to be used as a public health tool to benefit the most and not as a medical care tool. When the benefit of testing has become limited, as is the case in the current stage, targeted COVID-19 testing – to protect the vulnerable – is the right approach. Public health strategies have to be designed based on local context and cannot and should not be merely 'copied' from other settings. There are a few additional things that call for attention. There is a need for developing detailed COVID-19 hospital admission criteria and ensuring a better adherence to COVID-19 treatment guidelines, to prevent unnecessary admission and avoid unproven therapies that are not recommended. To respond to the current surge, there is a need to bring epidemiology and public health approaches to the forefront and ignore the 'opinion' of 'mushrooming experts' vocal and visible on television and 'omnipresent' on social media.

India's latest advisory on COVID-19 testing is bold, pragmatic and epidemiologically sound. More importantly, it shifts the balance of India's pandemic response from a 'treatment oriented' to a public health focused approach. It is another opportunity to bring science, data, debate, dialogue, evidence, epidemiology and public health in shaping India's response to the COVID-19 pandemic. The revised COVID-19 testing approach, arguably, is a pandemic strategy in which the rest of the world is likely to follow India.

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Dr. Chandrakant Lahariya is a physician-epidemiologist and public policy and health systems specialist. He is the lead co-author of the book, 'Till We Win: India's Fight Against The COVID-19 Pandemic'

Rural cases up after urban surge

Country records 2,59,291 COVID-19 cases on Thursday

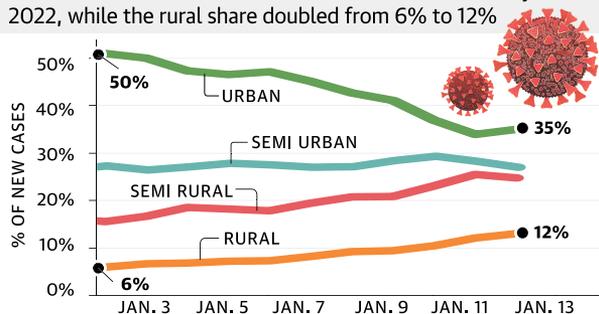
VIGNESH RADHAKRISHNAN
CHENNAI

Like every wave in the past, cases fuelled by the Omicron variant of COVID-19 have initially spread only in urban areas. However, many rural and semi-rural places recorded a sharp spike in infections in the past week.

At the start of this year, 50% of the cases were from urban centres such as Mumbai, Delhi, Chennai and Kolkata. However, the share reduced to 35% by Wednesday.

In contrast, the share of cases from rural areas increased from 6% at the start of the year to 12% by Wed-

Shifting patterns | Share of COVID-19 cases from urban areas reduced from 50% to 35% in the first 12 days of 2022, while the rural share doubled from 6% to 12%



nesday. In the same period, the share of cases in semi-rural areas increased from 15% to 25%.

In the first five days of the year, rural and semi-rural areas recorded only 58,000 cases collectively. In the latest five days, the areas recorded 2.12 lakh infections, a

266% increase. In the same period, cases in urban and semi-urban areas increased from about 1,80,000 to 6,00,000 cases, a 233% increase, slightly lower than rural counterparts.

India recorded 2,59,291 new cases on Thursday, the highest single-day rise in the

ongoing wave. Also, 18.86 lakh tests were conducted on Wednesday, the results of which are made available on Thursday. This is the highest number of tests in a single day in the ongoing wave.

12.5 lakh active cases

The figures are based on the State bulletins released until 10 p.m. on Thursday. Jharkhand and Tripura had, however, not yet released data for the day.

The cumulative cases in India have reached 3.65 crore and the cumulative death count has reached 4,85,376. The active cases stand at 12.5 lakh.

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Rural COVID-19 cases rise after urban surge

As of Thursday, India has fully vaccinated 63.6% of its eligible population (15+) and partially vaccinated 88.6%. Around 42.4% of the 15-17 age group population has received at least one dose.

PM holds meet with CMs

On Thursday, Prime Minister Narendra Modi chaired a meeting with Chief Ministers and Lt. Governors/administrators of States/Union Territories to review health preparedness and review the COVID-19 vaccination progress.

The Prime Minister noted that to defeat the virus, the country needs to keep its readiness ahead of every variant. "Along with tackling Omicron, we need to start preparing for any future variant from now itself," he said. He said safeguarding the economy and livelihood of common people while framing pandemic strategies is vital.

Cautioning that the Omicron variant is infecting the general public many times faster than the earlier variants, he said irrespective of variants, vaccination remains the most potent way

to deal with the pandemic. "We have to be alert, be careful, but we also have to take care that there should be no panic situation," said the PM.

Over 45,000 cases

Maharashtra reported 46,404 COVID-19 cases on Thursday taking the active case load over the 2.5-lakh mark. The active case tally now stands at 2,51,828.

The case positivity rate has increased to 9.92%.

While 34,658 recoveries or discharges were also reported on the day which also saw 36 new fatalities.

Mumbai city reported the highest cases in the State with 13,702 infections, taking the city's active case tally to 95,123. Six deaths took the fatalities to 16,426.

Pune district reported a big spike of more than 9,500 new cases – of whom nearly 6,000 were from Pune city alone – and 20 deaths.

The district active case tally has jumped to more than 38,000 active cases. Thane district reported more than 3,200 cases.

(With inputs from Rimjhim Singh and bureaus)

Liberal economics creates illiberal societies

A new form of 'Gandhian' democratic socialism powered by cooperative economic enterprises is required



ARUN MAIRA

A surging tide of nationalism and authoritarianism has imperilled democracy globally, and within presumptively democratic nations – the United States, India, the United Kingdom, and the European Union – too.

Economies are not doing well. The benefits of growth are being sucked up to the 1% on the top; 'trickle down' to those below has diminished. With every global crisis – the financial crisis of 2007-08 and the ongoing COVID-19 crisis – the rich get richer while millions at the bottom fall off the ladder. Inequalities of wealth have increased around the world and India is becoming one of the world's most unequal countries.

Political, economic symptoms

Like the COVID-19 virus, whose origins scientists are struggling to understand, another disease has been crippling the well-being of nations for 30 years. Political symptoms of the disease are the weakening of democracy and secularism. Its economic symptoms are inequities within economies and an unsustainability of economic growth. The socio-political and economic pathologies are inter-related. Economic despair is feeding the rise of authoritarianism, nationalism, and identity politics. Liberals who continue to advocate for more liberal economics must understand how their ideas have caused the rise of anti-liberal

societies and governments which they lament. They can no longer have their cake and eat it too.

Opening national borders to free trade became an ideology in economics in the last 30 years. Taxes of incomes and wealth at the top were also reduced. The ideological justification was that the animal spirits of 'wealth creators' must not be dampened. Otherwise, the pie will not grow and there will not be enough to share. With higher taxes until the 1970s, the U.S. and many countries in Europe had built up their public health and education infrastructure and strengthened social security systems. The rich are now being taxed much less than they were. The pie has grown larger but the richest few have been eating, and hoarding, most of it themselves.

On 'privatisation'

Governments are hamstrung without resources to provide public goods. 'Privatisation' of everything became another ideological imperative in economics by the turn of the century. Selling off public enterprises raises resources for funds-starved governments. Another justification is efficiency in delivery of services, setting aside ethical questions of equity. When 'public' is converted to 'private', rich people can buy what they need. In fact, they can buy more with their higher incomes even if the services become more expensive – better health care as well as better education for their children at the world's best schools. The children of wealthier people with better education have greater access to opportunities in the future also. The gaps between the haves and the have-nots be-



GETTY IMAGES/STOCKPHOTO

come larger.

Return of history

With not enough in the present, and receding hopes of better conditions in the future, people lose faith in their governments. History shows that whenever hopelessness spreads in societies, they are fertile grounds for messianic saviours who whip up pride in citizens' identities to distract them from their woes. History has not ended, even though Francis Fukuyama said it had when the Soviet Union collapsed. With it, he suggested, the idea of totalitarian governments as saviours of the people had been debunked; and the idea of public ownership of property, which the communists had taken to an extreme by abolishing all private property, had failed.

History has returned. Authoritarian governments are now being democratically elected by people seeking a way out of the morass. The U.S., the leader of the Cold War against the Soviets, built the "Washington Consensus" around a starkly "unsocialist", capitalist ideology which swept across erstwhile socialist countries of Europe and India too. Socialism seems to be back in U.S. politics now with Bernie Sanders, Elizabeth Warren, and young Democrats.

Liberal economists, promoting free markets, free trade, and privatisation, are worried by nationalism and authoritarian governments. They rail against "populist" policies of governments that subsidise the poor and adopt industrial strategies for self-reliance and jobs for their citizens. Liberals must re-examine their ideas of economics, to understand their own culpability in creating authoritarian and identitarian politics.

The property problem

Thomas Piketty's *Capital and Ideology* traces the ideology of "property" rights and its encounters with evolving ideas of "human" rights over the last three centuries. In proprietarian societies, it is just that he who owns more must have a greater say in the governance of the enterprise. In truly democratic societies, human rights must prevail, and every person, billionaire or pauper, must have an equal right to determine the rules of the game.

Democratic and capitalist principles were becoming reconciled with "socialist" ideas in Europe and the U.S. after the World Wars, and in developing countries such as India after the collapse of colonialism. The socialist era ended with the collapse of communism and the resurgence of neoliberal economics around the world afterwards.

While communism had lifted living standards, and the health and education of masses of poorer people faster than capitalism could, communism's solution to the "property" question – that there should be no private property – was a failure. It deprived people of personal liberties. Capital-

ism's solution to the property problem – replacing all publicly owned enterprises with privately owned ones (and reducing taxes on wealth and high incomes) has not worked either. It has denied many of their basic human needs of health, education and social security, and equal opportunities for their children.

The private property solution has also harmed the natural environment. The belief that private owners will husband natural resources sustainably for all has proven false. When natural resources, and knowledge converted into "intellectual property", become the property of business corporations, they will use them for the purpose for which a business corporation is created – which is to increase the wealth of its owners. The ecological commons are harmed, and social equity suffers.

Communism and proprietarian capitalism carried too far have both failed. Climate change and political rumblings around the world are both warnings that capitalism needs reform. Economic policies must be based on new ideas. Thought leaders and policymakers in India must lead the world out of the rut of ideas in which it seems to be trapped. Principles of human rights must not be overpowered by property rights. A new form of "Gandhian" democratic socialism, powered by cooperative economic enterprises, is required in the 21st century, to create wealth at the bottom, not only at the top, and save humanity and the planet.

Arun Maira, Former Member, Planning Commission, is the author of *A Billion Fireflies: Critical Conversations to Shape a New Post-pandemic World*

Space for dreams

Under a new leadership, ISRO will need to continue innovation

This year, the harvest festival brings a change at the helm for the Indian Space Research Organisation (ISRO), with S. Somanath who heads the Vikram Sarabhai Space Centre (VSSC) at Thiruvananthapuram taking over as its chairperson. He succeeds K. Sivan, who also came to head ISRO after having led the efforts at VSSC. Mr. Somanath is the third consecutive chairperson of ISRO to have a master's degree in engineering from the Indian Institute of Science. The organisation thus sees a continuation of the recent trend of being led by engineers. It is to be seen if Mr. Somanath's specific expertise in leading innovations in rocket engines, the cryogenic engine, for instance, will shape future developments at ISRO. If earlier the Mars Orbiter Mission, which broke the records for expense by costing just ₹7 per kilometre, and Chandrayaan 2, had kept anticipation high, the new chairperson will oversee the unfurling of the human space flight programme – Gaganyaan. Another long-awaited mission is Aditya-L1. This has morphed and grown into what will be India's grandest investment in space dedicated to science, specifically, solar physics. The aim to take a space observatory to the Lagrangian point one (L-1) to study the Sun offers yet another frontier for ISRO to breach.

Mr. Somanath will also lead a transition in the stance of ISRO towards privatisation. Until a few years ago, ISRO had remained largely preoccupied with deriving socio-economic benefits from space technology and applications that were used by the Government of India and some international collaborations. Of course, these ventures had a strong industry participation, but privatisation reforms have been pursued hard recently. The first announcement came in 2019, with the NewSpace India Limited (NSIL) being floated in March, and the commercial arm of ISRO was more firmly established. Apart from building and launching satellites, the company will provide launch services, build customised launch vehicles, provide services of Earth observation and communication through satellites and also transfer technology to Indian industry. As a sequel to the establishment of NSIL came the announcement of the creation of the Indian National Space Promotion and Authorization Center, in June 2020 – a channel through which non-governmental private enterprises can carry out space activities. The country's imagination to get up to speed with other competing nations would be put to the test under the new leadership. ISRO and its sister organisations have much to offer in the form of spin-offs and technology transfer. Underlying these questions is the anticipation which stems from the very nature of space science; it not only contributes to immense learning and perspective but also unfolds the very horizon, enhancing universal feelings of oneness.

EXPLAINER

The controversy over inclusion of the mmWave band in 5G auctions

Should India fragment the mmWave band? Can providing excess spectrum pose a downside risk of the bands going unsold or underutilised?

JOHN XAVIER

The story so far: Before the Telecom Regulatory Authority of India (TRAI) submits 5G pricing recommendations to the Department of Telecommunications (DoT) in March, the regulator had sought industries' views (till January 11) on topics related to quantum of spectrum to be auctioned off. It had also asked for views on band plan, block size, and conditions for auction of spectrum in new bands, which includes millimetre (mm) Wave band of 24.25-28.5 GHz. An industry body that represents interests of the communication satellite ecosystem in India has voiced concerns over the Government's plan to include the mmWave bands in the spectrum auction, which is slated for later this year.



Telecommunication Union (ITU). The industry body pointed to Europe's "5G Roadmap", which is built on the ITU's decision to hold these bands for satellite-based broadband services. The SIA also noted that offering excessive spectrum resources in the upcoming 5G auction will result in Indian citizens being denied the benefits of high-demand, advanced satellite broadband services. In addition to this, it will result in a massive loss to the Indian economy of up to \$184.6 billion by 2030,

along with the loss of foreign direct investment (FDI) and employment generation benefits.

What is a millimeter Wave band? Millimetre Wave band or mmWave is a particular segment of radio frequency spectrum that range between 24 GHz and 100 GHz. This spectrum, as the name suggests, has a short wavelength, and is apt to deliver greater speeds and lower latencies. This in turn makes data transfer efficient and seamless as the current available networks work optimally only on lower frequency bandwidths.

5G services can be deployed using lower frequency bands. They can cover greater distances and are proven to work efficiently even in urban environments, which are prone to interference. But, when it comes to data speeds, these bands fail to hit peak potential needed for a true 5G experience. So, mmWave is that quintessential piece in the 5G jigsaw puzzle for mobile service providers.

How could this disrupt the satellite communication industry? Internet has largely been provided to users via fibre-optic based broadband

connectivity or mobile network. Of late, another class of Internet vendors is showing up. These are satellite-based communication service providers. For example, SpaceX's Starlink and Bharti Airtel's OneWeb are some of the players in this market. This segment uses Low-Earth Orbit (LEO) satellites to provide broadband to both urban and rural users. Their service could also be used for weather predictions.

According to an IEEE Wireless Communications paper on Spectrum Policy, "the 24.25-27.5 GHz band had been the subject of controversy due to out-of-band emissions into the passive satellite band used for weather satellites at 23.6-24 GHz." This issue was later resolved by setting a limit for base station emissions into the satellite band. The limit would become more restrictive in 2027, and any equipment installed prior to that date will be made acceptable. This compromise was reached in the hope that it will allow an immediate rollout of 5G in this band while pressing manufacturers to decrease, in the long term, out-of-band emissions into the nearby passive band where they may impact weather prediction data.

The satellite communication industry

is looking to pre-empt mobile telephony vendors' move by ensuring that the bands don't go to them in the first place. But, until 2027, these bands can be auctioned off to mobile Internet service providers.

What does SIA-India suggest? SIA-India has noted that the 330 MHz of spectrum in the 3.3-3.67 GHz band is enough to satisfy India's mid-band 5G needs while ensuring a competitive auction. India has three private mobile network operators holding 90% of the total market share. These three will be able to secure the available spectrum, roughly 80-90 MHz each, while leaving the remaining 10% to state-owned enterprises.

The industry body also noted that providing excess spectrum could pose a downside risk of the bands going unsold, or even worse, underutilised by terrestrial players at the expense of satellite-based service providers. The allocation of mmWave band is critical to the satellite communication industry, which needs a stronger regulatory support to ensure that 5G operations don't interfere with their existing operations.

THE GIST

- An industry body has voiced concerns over the Government's plan to include the mmWave bands in the 5G spectrum auction.
- A mmWave band is a segment of radio frequency spectrum with a short wavelength, which can deliver greater speeds and lower latencies. The band has been the subject of controversy due to out-of-band emissions into the passive satellite band.
- The industry body argued that providing excess spectrum could pose a risk of the bands going unsold or underutilised at the expense of satellite-based service providers.

A pig heart transplant in Assam in 1997

RAHUL KARMAKAR
GUWAHATI

On January 7, doctors at the University of Maryland Medical School in the U.S. made news when they transplanted a genetically modified pig heart into a 57-year-old man.

Few remember now that Dhaniram Baruah, a cardiothoracic surgeon based in Sonapur near Guwahati, transplanted the organs of a pig into a human body in 1997. However, Dr. Baruah's xenotransplantation procedure ended badly.

Xenotransplantation is the process of grafting or transplanting organs or tissues between members of different species.

"It is not easy for a human body to accept the organs of a pig. Time will tell whether the human body will accept the organ of a genetically-altered pig," the 72-year-old doctor, who lost his voice after undergoing throat surgery some time ago, said via S.A. Achrekar, a senior scientist at his research institute in Sonapur.

At an international conference in 1995, Dr. Baruah had said pigs are close to humans in various aspects. He had at the time developed an "electric motor-driven artificial biological heart made of ox pericardium that was implanted in a pig".

Dr. Baruah said he had carried out 102 animal experiments on xenotransplantation. He transplanted a pig's heart, lung and kidneys to Purno Saikia, a 32-year-old end-stage organ failure patient, on January 1, 1997. Jo-

nathan Ho, a Hong Kong-based doctor, had assisted him in the transplantation at his research centre.

But Sakia died a week later, triggering an uproar. The two doctors were arrested on January 10 under the Transplantation of Human Organs Act, 1994, booked for culpable homicide and imprisoned for 40 days. Subsequently, the Assam government formed an inquiry committee that found pig heart implants to be unethical and unlawful.

Forest, tree cover in India up by 2,261 sq. km in two years

A.P. followed by Telangana, Odisha saw most increase: report

SPECIAL CORRESPONDENT
NEW DELHI

Forest and tree cover in the country has increased by 2,261 square kilometres since the last assessment in 2019, according to the India State of Forest Report-2021 released on Thursday.

Releasing the report, Environment and Forest Minister Bhupender Yadav said the total forest and tree cover was 80.9 million hectares, which accounted for 24.62% of the geographical area of the country. The report said 17 States and Union Territories had more than 33% of their area under forest cover. Mr. Yadav said the Narendra Modi government's focus was to enrich the forests qualitatively.

The report found that there had been a 1,540 sq. km increase in forest cover and 721 sq. km increase in tree cover since the last report in 2019.

Top 3 States

"Increase in forest cover has been observed in open forest followed by very dense forest. Top three States showing increase in forest cover are Andhra Pradesh (647 sq. km) followed by Telangana (632 sq. km) and Odisha (537 sq. km)," a Ministry statement said.



Green cover: Total forest, tree cover is 80.9 million hectares, accounting for 24.62% of geographical area.

Madhya Pradesh had the largest forest cover, followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra. The top five States in terms of forest cover as a percentage of their total geographical area were Mizoram (84.53%), Arunachal Pradesh (79.33%), Meghalaya (76%), Manipur (74.34%) and Nagaland (73.90%).

Mangrove cover

The total mangrove cover in the country had increased by 17 sq. km, to reach 4,992 sq. km. The total carbon stock in forests was estimated to be 7,204 million

tonnes, an increase of 79.4 million tonnes from 2019.

The Ministry said the survey used mid-resolution satellite data, followed by "rigorous ground truthing" and information from other sources.

"The accuracy level achieved in the current assessment is significantly high. The accuracy of forest cover classification has been assessed 92.99%. The accuracy of classification between forest and non-forest classes has been assessed 95.79% against internationally accepted accuracy of classification of more than 85%," the Ministry said.

India, China agree for more LAC talks

14th round of talks between military commanders did not yield breakthrough

ANANTH KRISHNAN
HONG KONG

India and China on Thursday agreed to “stay in close contact and maintain dialogue” to work out a “mutually acceptable resolution” of remaining issues along the Line of Actual Control (LAC), although the latest round of talks between military commanders did not yield an immediate breakthrough.

While there was no agreement as yet to disengage in the three remaining areas of difference – on the agenda this week was Hot Springs, while differences in Demchok and Depsang are more pronounced with the prospects of an early resolution there unlikely – exchanges between the two sides during the 14th round of Corps Commander-level talks, held on the Chinese side of the Chushul-Moldo border meeting point, struck a more positive note than the previous round, officials said.

In October, the 13th round failed to yield a joint statement with both sides trading accusations, with India saying that China failed to offer any forward-looking suggestions while China described India’s proposals as unrealis-



An Army convoy travelling towards Leh. ■ GETTY IMAGES

tic. A joint statement released on Thursday in New Delhi and Beijing indicated that progress had been made but that further work was needed to arrive at a resolution.

The statement said the two sides “agreed to stay in close contact and maintain dialogue via military and diplomatic channels and work out a mutually acceptable resolution of the remaining issues at the earliest” and “also agreed that the next round of the Commanders’ talks should be held at the earliest”.

New commanders

The 14th round saw two new commanders from each side

leading the talks, with the Indian delegation led by Lieutenant-General Anindya Sengupta, who has taken over as General Office Commanding of the Leh-based 14 Corps. The Chinese side was led by Major-General Yang Lin, the new head of the PLA’s South Xinjiang Military District.

The joint statement said the two sides agreed “to work for the resolution of the remaining issues at the earliest” and that “this would help in restoration of peace and tranquillity along the LAC in the Western Sector and enable progress in bilateral relations”.

“The two sides also agreed to consolidate on the previous outcomes and take effective efforts to maintain the security and stability on the ground in the Western Sector, including during winter,” the statement said.

The statement acknowledged the need to resolve remaining issues “at the earliest”.

Of the remaining disputes in Hot Springs, Demchok and Depsang, the expectation of a solution in the near-term is likely at Hot Springs. Both sides disengaged from Pangong Tso in February

2021 and from Patrolling Point 17 in the Gogra area in August. The Chinese side in earlier rounds was not willing to discuss proposals to disengage in Demchok and Depsang.

On Wednesday, Army chief General Manoj Naravane said there had been partial disengagement but added that a threat level remained and the Chinese had put in place a lot of infrastructure in forward areas.

He said, “It remains to be seen whether they will permanently station themselves there or whether they will be amenable to some kind of de-induction in the times to come.”

Unconstructive remarks

Asked by a foreign media outlet for a response to the Army chief’s comments, Chinese Foreign Ministry spokesperson Wang Wenbin said, “China and India are in dialogue and communication through diplomatic and military channels to ease the situation at the border.”

“We hope that certain individual on the Indian side would refrain from making unconstructive remarks,” he added.

Not possible to demilitarise Siachen

Not an ideal scenario in view of stand-off in Ladakh and Chinese build-up: experts

DINAKAR PERI
NEW DELHI

We are “not averse” to demilitarisation of the Siachen glacier but the pre-condition is Pakistan has to accept the Actual Ground Position Line (AGPL), Army chief General Manoj Naravane said on Wednesday, raising a fresh debate over the world’s highest battlefield, with experts saying it may not be ideal in the backdrop of the stand-off in eastern Ladakh and the Chinese build-up.

In contrast to the present comments, the Army chief had two years ago termed Siachen as a point of “collusive threat” between Pakistan and China and so “we

should keep control”. However, with the stand-off in eastern Ladakh and massive build-up and expansion by the People’s Liberation Army (PLA) in sub-sector north which is very close to the Karakoram range and Soltoro ridge, several serving officials and experts noted that it would not be possible for India to vacate the crucial positions on the glacier.

At the annual press conference, Gen. Naravane said, “Pakistan has to accept what are their positions and has to accept what are our positions.”

He said the situation had occurred due to a unilateral attempt by Pakistan to

change the status quo. The Line of Control (LoC) had been delineated to a point called NJ 9842, and thereafter, the understanding was that it will remain unoccupied. But Pakistan had made an attempt to occupy territory and “we were forced to

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take our countermeasures”, Gen. Naravane said.

Siachen and Sir Creek have long been termed “low hanging fruits” in the past for resolution between India and Pakistan and the two countries have held 13 rounds of Defence Secretary-

level talks on Siachen, the last one in June 2012.

Former Northern Army Commander Lt. Gen. D.S. Hooda said the Indian Army has not been averse to a disengagement at Siachen but it has not happened due to a reluctance by the Pakistan Army to accept the positions that are occupied by the Indian Army.

“Now the situation has completely changed with the PLA aggression in the sub sector north in eastern Ladakh. With the Siachen sector facing threats from both west and east, there is perhaps no question of any disengagement from Siachen,” he told *The Hindu*.

General Studies Paper I	
A	History of Indian culture will cover the salient aspects of art forms, literature and architecture from ancient to modern times;
B	Modern Indian history from about the middle of the eighteenth century until the present-significant events, personalities, issues;
C	Freedom struggle-its various stages and important contributors / contributions from different parts of the country;
D	Post-independence consolidation and reorganization within the country;
E	History of the world will include events from 18 th century such as industrial revolution, world wars, re-drawal of national boundaries, colonization, decolonization,
F	Political philosophies like communism, capitalism, socialism etc.-their forms and effect on the society
G	Salient features of Indian Society, Diversity of India;
H	Effects of globalization on Indian society;
I	Role of women and women's organization;
J	Social empowerment, communalism, regionalism & secularism
K	Salient features of world's physical geography;
L	Geographical features and their location- changes in critical geographical features (including water bodies and ice-caps) and in flora and fauna and the effects of such changes;
M	Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc.
N	Distribution of key natural resources across the world (including South Asia and the Indian subcontinent);
O	Factors responsible for the location of primary, secondary, and tertiary sector industries in various parts of the world (including India);
P	Population and associated issues;
Q	Urbanization, their problems and their remedies
General Studies Paper II	
A	India and its neighbourhood- relations;
B	Important International institutions, agencies and fora- their structure, mandate;
C	Effect of policies and politics of developed and developing countries on India's interests;
D	Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.
E	Indian Constitution, historical underpinnings, evolution, features, amendments, significant provisions and basic structure;
F	Comparison of the Indian Constitutional scheme with other countries;
G	Functions and responsibilities of the Union and the States, issues and challenges pertaining to the federal structure, devolution of powers and finances up to local levels and challenges therein; Inclusive growth and issues arising from it;
H	Parliament and State Legislatures - structure, functioning, conduct of business, powers & privileges and issues arising out of these;
I	Structure, organization and functioning of the executive and the judiciary, Ministries and Departments;

J	Separation of powers between various organs dispute redressal mechanisms and institutions;
K	Appointment to various Constitutional posts, powers, functions and responsibilities of various Constitutional bodies;
L	Statutory, regulatory and various quasi-judicial bodies;
M	Mechanisms, laws, institutions and bodies constituted for the protection and betterment of these vulnerable sections;
N	Salient features of the Representation of People's Act;
O	Important aspects of governance, transparency and accountability, e-governance- applications, models, successes, limitations, and potential;
P	Citizens charters, transparency & accountability and institutional and other measures;
Q	Issues relating to poverty and hunger,
R	Welfare schemes for vulnerable sections of the population by the Centre and States, Performance of these schemes;
S	Issues relating to development and management of social sector / services relating to education and human resources;
T	Issues relating to development and management of social sector / services relating to health
General Studies Paper III	
A	Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment;
B	Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth;
C	Inclusive growth and issues arising from it;
D	Infrastructure Energy, Ports, Roads, Airports, Railways etc. Government budgeting;
E	Land reforms in India
F	Major crops, cropping patterns in various parts of the country, different types of irrigation and irrigation systems;
G	Storage, transport and marketing of agricultural produce and issues and related constraints;
H	e-technology in the aid of farmers; Technology Missions; Economics of Animal-Rearing.
I	Issues of buffer stocks and food security, Public Distribution System- objectives, functioning, limitations, revamping;
J	Food processing and related industries in India – scope and significance, location, upstream and downstream requirements, supply chain management;
K	Issues related to direct and indirect farm subsidies and minimum support prices
L	Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-technology;
M	Indigenization of technology and developing new technology;
N	Developments and their applications and effects in everyday life;
O	Issues relating to intellectual property rights
P	Conservation, environmental pollution and degradation, environmental impact assessment
Q	Disaster and disaster management
R	Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security;
S	Money-laundering and its prevention;

T	Various forces and their mandate;
U	Security challenges and their management in border areas;
V	Linkages of organized crime with terrorism;
W	Role of external state and non-state actors in creating challenges to internal security;
X	Linkages between development and spread of extremism.
General Studies Paper IV	
A	Ethics and Human Interface: Essence, determinants and consequences of Ethics in human actions;
B	Dimensions of ethics;
C	Ethics in private and public relationships. Human Values - lessons from the lives and teachings of great leaders, reformers and administrators;
D	Role of family, society and educational institutions in inculcating values.
E	Attitude: Content, structure, function; its influence and relation with thought and behaviour;
F	Moral and political attitudes;
G	Social influence and persuasion.
H	Aptitude and foundational values for Civil Service , integrity, impartiality and non-partisanship, objectivity, dedication to public service, empathy, tolerance and compassion towards the weaker sections.
I	Emotional intelligence-concepts, and their utilities and application in administration and governance.
J	Contributions of moral thinkers and philosophers from India and world.
K	Public/Civil service values and Ethics in Public administration: Status and problems;
L	Ethical concerns and dilemmas in government and private institutions;
M	Laws, rules, regulations and conscience as
N	sources of ethical guidance;
O	Accountability and ethical governance; strengthening of ethical and moral values in governance; ethical issues in international relations and funding;
P	Corporate governance.
Q	Probity in Governance: Concept of public service;
R	Philosophical basis of governance and probity;
S	Information sharing and transparency in government, Right to Information, Codes of Ethics, Codes of Conduct, Citizen's Charters, Work culture, Quality of service delivery, Utilization of public funds, challenges of corruption.
T	Case Studies on above issues.