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INTERNATIONAL

WHY CAN'T AMERICA SOLVE ITS GUN PROBLEM?

The story so far: On May 24, a gunman went on a shooting rampage at Robb Elementary School in the small town of Uvalde, Texas, killing 19 children and two teachers. The attack has reminded the U.S. yet again that it has failed to act to stop gun crimes despite the grim toll on human life for several decades. The shooter, identified in reports as 18-year-old Salvador Ramos, carried out the massacre using AR-15 assault rifles, which he allegedly purchased legally from a gun store. The murders, which came scarcely 10 days after 10 people were shot dead at a grocery store in Buffalo, New York, an incident identified as a racist hate crime, have prompted another round of acrimony between liberals and conservatives on the need for tighter gun control laws. U.S. President Joe Biden wasted no time in condemning the attack but was sketchy on details regarding what legislation or executive actions he hoped to push forward to close regulatory loopholes that allow teenagers to buy assault weapons, and, more broadly, a lack of background checks for potential gun buyers. Neither Mr. Biden, nor any of his Democratic predecessors have succeeded in getting common-sense gun control reform passed in the U.S. Congress owing to Republican lawmakers' refusal to budge on their view regarding their constitutional right to bear arms.

How many school shootings have occurred in recent years?

The Uvalde school shooting is the worst such attack on U.S. soil since the incident at Sandy Hook elementary attack in Newtown, Connecticut, in 2012, in which 20 first-graders and six school employees were killed. A similar toll on human life came after a shooting at Marjory Stoneman Douglas High School in 2018, when a former student of the school in Parkland, Florida, killed 17 persons and wounded 17 others.

Overall, there have been at least 26 school shootings in 2022 alone and at least 118 incidents since 2018, according to reports that have tracked this statistic over the past four years. However, these include 'non-mass shootings' where fewer than four persons were killed in a single incident. Using this statistic, 2021 witnessed 34 shootings, the highest number during this period, followed by 24 incidents each in 2019 and 2018 and 10 shootings in 2020.

Considering mass school shootings alone, there have been 13 such attacks since 1966, including notably the Columbine High School massacre of 1999, at that time the worst mass shooting at a school in American history. It is concerning that the Columbine attack's death toll now ranks fourth, after the three more recent shootings at Uvalde, Parkland and Newtown overtook the former on that grim statistic during the past decade.

What is the role of the Second Amendment?

The U.S.'s penchant for gun ownership stems from its deep belief in the Second Amendment of its constitution, which assures its citizenry that "a well-regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed." The Second Amendment, ratified in 1791, was one of 10 such that together make up the Bill of Rights in the U.S. constitution. The original intent of the founding fathers of the nation was to give to the people the right to defend themselves against an oppressive government and create an armed militia that could be recruited into federal military in the event of a war with a foreign power. However, after the balance of power shifted from the states to the federal government, including technological advances that made the U.S. military a far superior force than any local or state

militia could hope to be, the only interpretation of the Second Amendment that remained was that it guaranteed, at the individual level, the right to bear arms.

In 1939, the U.S. Supreme Court considered the matter in United States v. Miller and ruled that local, state, and federal legislative bodies possessed the authority to regulate firearms without implicating a constitutional right given that there was no individual right to bear arms, only a collective right of the citizenry. Using this ruling the state then regulated the inter-state commerce of sawed-off shotguns, which it deemed to not be consistent with any requirements of a "well-regulated militia." That interpretation stood until 2008, in the case of District of Columbia v. Heller, where the Supreme Court held that the "Second Amendment protects an individual right to possess a firearm unconnected with service in a militia, and to use that arm for traditionally lawful purposes, such as self-defence within the home," effectively reading down a ban on handgun possession in Washington DC.

Regardless of the state of legal protections, a strong culture of gun ownership has permeated the broader consciousness of security-minded U.S. citizens since the times of the 'Wild West' or America frontier days. Today that culture is most fervently institutionalised in the Republican party, which has close links to the National Rifle Association, also a well-networked and deep pocketed organisation that systematically lobbies with lawmakers on Capitol Hill to get specific laws passed favouring the possession and trade of firearms.

It is in this context that there are no surprises that Congress rejected no fewer than 17 attempts by the administration of former President Barack Obama to get common-sense gun control passed on the floor of the Senate. In the end Mr. Obama resorted to passing gun control reform by diktat, that is through the temporary route of executive actions. Exercising presidential power in this manner may be the only option available to Mr. Biden. These should, at a minimum, include an assault weapons ban, expanded background checks, and ban on gun ownership by those with mental illness, criminal records, or minors.

What about India?

Gun licence applicants in India must be at least 21 years and not convicted of any offence involving violence, of 'unsound mind' or a threat to public safety and peace. Upon receiving an application, the licensing authority (i.e., the Home Ministry), asks the officer in-charge of the nearest police station to submit a report about the applicant after thorough vetting.

The Arms Act amended in 2019 reduces the number of firearms that an individual can procure from three to two.

Indian laws are particularly elaborate in dealing with sale and unlawful trade of weapons. It also enlists specific provisions on curtailing the use of licensed weapons to ensure social harmony. No entity is permitted to sell or transfer any firearm which does not bear the name of the maker, manufacturer's number or any other visible or stamped identification mark. Any act of conversion (such as shortening the barrel of a firearm or converting an imitation firearm into a firearm) or unlawful import-export is punishable with an imprisonment term of seven years, which may extend to life imprisonment and be liable to monetary fines.

THE AZERBAIJAN-ARMENIA CONFLICT OVER NAGORNO-KARABAKH ENCLAVE

The story so far: Armenia's Prime Minister Nikol Pashinyan and Azerbaijan's President Ilham Aliyev announced on May 23 that their respective countries would be setting up border security

and delimitation commissions, signalling a step towards resolution of a decades-long conflict over the Nagorno-Karabakh Enclave. The talks between the two leaders have triggered protests in the Armenian capital of Yerevan and other parts of the country and the Opposition has demanded his resignation.

How did the conflict over Nagorno-Karabakh begin?

Nagorno-Karabakh is a landlocked, mountainous and forested region, falling within the boundaries of Azerbaijan. Nagorno-Karabakh, called Artsakh in Armenian, hosts a predominantly ethnic Armenian population with an Azeri minority. It is located in the South Caucasus region and is roughly made up of modern-day Armenia, Azerbaijan, and Georgia.

Nagorno-Karabakh, which was once a part of the Armenian kingdom, has been ruled by several empires over the centuries — the Ottomans, the Persians, and the Russians.

Armenia, Azerbaijan and Georgia later became separate Republics, with the Azeris incorporating Nagorno-Karabakh into their Republic. During the First World War, the Ottomans, aided by Azeris, attacked the south Caucasus, especially targeting ethnic Armenians. As the Ottomans retreated at the end of the World War, Azerbaijan and Armenia descended into a full-blown war in 1920.

The Azeri-Armenian war of 1991

Soon, the Bolsheviks took over south Caucasus to expand Soviet influence and Azerbaijan, Armenia, and Georgia became Soviet Republics. The Soviets officially placed Nagorno-Karabakh as an autonomous Oblast (administrative region) in Azerbaijan's territory, despite the chiefly Armenian population. As Soviet power began to wane in the 1980s, the ethnic Armenian population of Nagorno-Karabakh expressed a desire to be reunited with their roots and become a part of Armenia, organising a vote for the same in 1988.

This did not go down well with Azerbaijan and military clashes ensued. The war killed nearly 30,000 people and caused numerous ethnic Azeris to flee Karabakh and Armenia. Some Armenians in parts of Azerbaijan fled too.

By 1993, Armenia had taken control of most of Nagorno-Karabakh. The war ended in 1994 when both countries entered into a ceasefire brokered by Russia but the borders of Armenia and Azerbaijan were not demarcated. Peace talks were initiated by the Minsk Group but peace treaty could not be brokered.

The Minsk Group, created by the Organisation for Security and Cooperation in Europe (OSCE) in early 1990, was co-chaired by Russia, the United States, and France.

The Minsk Group's proposals were continously rejected by both Yerevan and Baku. The role of the Minsk Group declined during the 2020 war between the two countries, as other negotiating groups entered the scene.

The war of 2016 and 2020

A ceasefire signed in 1994 could not prevent multiple flare-ups between the Nagorno-Karabakh rebel armed forces backed by the Armenian military, and the Azerbaijani military. Some skirmishes turned into direct clashes and the conflict has resulted in several casualties over the years.

In 2016, a clash started between Azerbaijan and Armenia which lasted for four days. A ceasefire signed in Moscow put an end to the war but the Nagorno-Karabakh issue was far from resolved.

Fresh clashes erupted on the Armenia-Azerbaijan border in September of 2020, which turned into a fierce six-week war in which more than 2,000 people died. The fighting began after Azerbaijani President Aliyev launched an offensive vowing to take back Nagorno-Karabakh and other Armenian-occupied districts.

Both parties entered a ceasefire brokered by Moscow in November 2020.

Who is organising the current peace talks and where do they stand?

Despite the 2020 ceasefire, clashes have not stopped. In November last year, seven Azerbaijani and six Armenian soldiers were killed in border clashes. With the efforts of the Minsk Group remaining largely unsuccessful, Baku saw an opportunity to introduce its own peace proposal, which calls for the mutual recognition of each State's territorial integrity, meaning the recognition of Nagorno-Karabakh within Azerbaijani territory.

The European Union, meanwhile, has emerged as a potential peace broker. European Council President Charles Michel spearheaded meetings between both countries for the beginning of peace talks twice in April, and again more recently on May 22.

While both countries have now agreed to formulate border security and delimitation commissions and start talks for a peace deal, a permanent solution for the Karabakh issue remains out of sight.

THE EUROPEAN UNION'S BAN ON RUSSIAN OIL

The story so far: As part of the sixth package of sanctions since Russia's invasion of Ukraine, the European Union member states on May 30 reached an agreement to ban 90% of Russian crude oil imports by the end of the year. The partial embargo, worked out following extended negotiations in Brussels, exempts pipeline oil in order to bypass Hungary's objections to the ban.

What was the original proposal of the oil embargo?

The proposal to completely phase out Russian crude and refined products from EU territory within a time frame of six to eight months was first mooted by European Commission President Ursula von der Leyen in early May. Addressing European lawmakers, she sought a "complete import ban on all Russian oil, seaborne and pipeline crude and refined." It needed the agreement of all the 27 EU member states in order to be implemented.

What was the rationale behind such a move?

The Russian economy is heavily dependent on energy exports, with the EU paying billions of dollars every month to Russia for its crude and refined products. The EU wants to block this massive revenue inflow which, as repeatedly pointed out by Ukrainian President Volodymyr Zelensky, is akin to Europeans bankrolling Russia's war. The EU has been attempting, ever since the Ukraine invasion, to build consensus on ways to hurt Russia economically so that it is forced to roll back its military offensive. The most obvious route was to stop buying Russian energy, which isn't easy given European households' dependence on Russian oil and gas.

However, in the context of two long term EU objectives — reducing fossil fuel dependence in favour of renewables, and eliminating dependence on Russian energy for greater strategic

autonomy and energy security — member states agreed to make a start by phasing out Russian oil.

What are the terms of the 'compromise deal' that has been agreed upon?

The main departure from the original proposal is the "temporary exemption" from the oil embargo for countries that import Russian crude via pipeline. In other words, EU leaders have, in principle, agreed to ban all seaborne imports of Russian crude, which account for two-thirds of EU's oil imports from Russia. However, with Germany and Poland pledging to phase out even their pipeline imports from Russia by the end of the year, the embargo would eliminate 90% of Russian oil imports. The remaining 10% that's been allowed represents a free pass for Hungary, the Czech Republic, Slovakia, and Bulgaria to continue imports via the Druzhba pipeline, the world's largest oil pipeline network. Additionally, Hungary has obtained a guarantee that it could even import seaborne Russian oil in case of a disruption to their pipeline supplies.

This was deemed a legitimate concession since the pipelines do pass through the war zone in Ukraine.

Why was exemption given for pipeline imports?

The exemption for pipeline imports — essentially at the behest of Hungarian Prime Minister Viktor Orban — was made on the logic that landlocked countries (Hungary, Czech Republic and Slovakia) that are heavily dependent on Russian pipeline oil do not have a ready option to switch to alternative sources in the absence of ports. While Hungary imports 65% of its oil via pipeline from Russia, 50% of the Czech Republic's oil imports are Russian, while Slovakia gets 100% of its oil from Russia. Bulgaria, which gets 60% of its oil from Russia, is not landlocked. But its refineries at present are only equipped to process Russian crude.

Until it invests in infrastructure to be able to process non-Russian crude delivered to its ports, it wants to be able to continue importing Russian oil via pipeline and has accordingly claimed the exemption.

Do the exemptions dilute the embargo?

EU leaders have countered this criticism by pointing out that even a partial (90%) embargo on Russian oil represents tremendous progress in terms of weaning EU off Russian oil — something that was unthinkable even a few months ago given the magnitude of Europe's dependence on Russian energy imports.

Secondly, they have reiterated that even the exemption for pipeline imports is not permanent and will be revisited soon. However, no timeline has been specified for a total ban on pipeline imports.

Are there other elements in the sixth package of sanctions?

Apart from the oil embargo, the sixth package of sanctions also contains other tough measures against Russia. These include cutting off Sberbank, Russia's largest bank that holds one-third of Russian banking assets, from the SWIFT messaging system; a ban on three Russian-owned broadcasting networks from the EU; sanctions on individuals responsible for war crimes in Ukraine; and a ban on EU-based firms offering insurance, financing, brokering or any other technical services related to the transport of oil to Russian ships — a measure aimed at curbing Russia's ability to divert its oil to non-EU destinations.

How will the sanctions affect Russia?

Analysts calculate that a two-thirds cut in Europe's imports of Russian oil would mean a reduction of 1.2-1.5 million barrels a day in oil, and one million barrels in refined products, which might cause Russia an annual loss in revenue of $10 billion. Given Russia's limited storage infrastructure, the cutback in demand would force Russia to find other markets. Since that won't be easy, Russia might have to cut production by 20-30%, say industry experts. So far, Asian importers, especially India, have absorbed some of the excess inventory at discounted prices. But it remains unclear if the embargo would have any impact on Russian military operations in Ukraine.

How will the sanctions affect Europe?

It is likely to further fuel inflation in Europe, where many countries are already facing a cost-of-living crisis. EU leaders have tried to balance contradictory pressures — of having to take decisive action against a military aggressor on European soil, but without causing too much pain to its citizens. But European lifestyles have tended to take cheap Russian energy for granted, and if inflation peaks further, the EU runs the risk of losing public support for harsh sanctions.

What about import of Russian gas?

Compared to Russian oil, Europe's dependence on Russian gas is much greater, and this embargo leaves the import of Russian gas — which accounts of 40% of Europe's natural gas imports — untouched. In other words, Europe will continue to pay Russia for gas imports. But since crude is more expensive than natural gas, the oil ban is expected to hurt Russian revenues.

How has India responded to these developments?

India ramped up purchases of Russian crude at discounted prices in the months following the Russian invasion, and this policy is expected to continue. The announcement of the EU ban caused an immediate surge in oil prices, and as Europe seeks alternate sources – from West Asia, Africa and elsewhere — for its oil needs, prices are expected to stay high. In this context, with Russia reportedly offering discounts of $30-35 per barrel, India has found it convenient to make the most of the cheap Russian crude on offer.

THE STATUS OF RUSSIA'S INVASION OF UKRAINE

The story so far: Three months after Russia started the invasion of Ukraine, its troops are making slow but steady advances in the eastern Donbas region. Russia has faced stiff resistance from the Ukrainian troops from day one and the crisis has snowballed into a larger security contest between Moscow and the West, which has pumped money and weapons to Ukraine. With no peace talks on the table and neither side showing any signs of compromise, the war is likely to grind on for many more weeks, if not months.

What's the current status of the invasion?

Russia started the war on February 24 on three fronts — its troops moved in from the Belarussian border in the north, from the separatists-controlled parts of Donbas in the east and from the Russian-controlled Crimean peninsula in the south. While announcing his "special military operation", President Vladimir Putin said "demilitarisation and de-Nazification" of Ukraine were his goals. It's anybody's guess whether Russia wanted to capture Kyiv and bring in a regime change. But clearly, at least as part of their war strategy, the Russians sought to envelope Kyiv,

while its troops attacked cities in the east and south. While its forces made gains in the east and south, they faced stiff resistance from the Ukrainian forces in the north and northeast. As its advances slowed down, Russia pulled back troops from around Kyiv, ending its efforts to envelope the city, and retreated from Kharkiv, Ukraine's second largest city which lies about 40 km from the Russian border, and focussed its resources on the east.

The southern city of Kherson had fallen into Russian hands in the initial days of the war. From the south, Russian troops have moved towards the outskirts of Zaporizhzhia, taking over the eponymous nuclear plant, the largest in Europe. In the eastern Donbas region, the Russians have taken almost all major cities. They took Mariupol, a Sea of Azov port city known for its steel plants, last month after a prolonged siege. They took Lyman in Luhansk last week while advancing towards Severodonetsk, the easternmost city in Ukrainian hands.

As of Monday, pro-Russia media have claimed, quoting Chechen leader Ramzan Kadyrov, that the Russians have seized Severodonetsk. The Ukrainian authorities have contested this claim, but independent reports confirm that the Russians have entered the city. Faced with the likelihood of being encircled in the east, Ukrainians troops hinted last week that they might make a tactical retreat to bolster their defences elsewhere.

What does Russia want?

Russian Foreign Minister Sergei Lavrov said on Monday that the "liberation" of Donbas was Russia's "unconditional priority". Donbas, the traditional industrial region that has historical ties with Russia, encompasses Ukraine's Luhansk and Donetsk oblasts (now, self-declared Luhansk and Donetsk People's Republics, which were recognised by Mr. Putin as sovereign states before ordering the invasion). Russia has already taken almost all of Luhansk.

Severodonetsk (it was the capital of the Ukrainian-controlled parts of Luhansk), is the only major city where there is still Ukrainian presence in the oblast (province) and all reports indicate that the city would be in complete Russian control within days, if it hasn't already fallen.

Russia and the separatists it backs have also taken a sizeable part of Donetsk, including Mariupol, which allowed Moscow to establish a land bridge from the Russian mainland to Crimea along the coast of the Sea of Azov. Mariupol was also the headquarters of the Azov Battalion, the neo-Nazi group that had been integrated into the Ukrainian armed forces. The capture of the city serves the Russian claims of "de-Nazifying" Ukraine.

If Mr. Lavrov should be trusted, Russia is likely to shift its focus to the Ukraine-controlled parts of Donetsk once Severodonetsk is fully in its control. But there's no clarity on whether Russia would stop the war even if it captures the whole of Donbas. There are conflicting signals from Russian leadership. According to Mr. Putin, "demilitarisation and deNazification" are the goals, which are open for interpretation. As per Mr. Lavrov, "liberation of Donbas" is the priority.

In April, Maj Gen Rustam Minnekayev, a senior Russian commander, said Russia wanted the whole of Ukraine's east and south. If Mr. Minnekayev is right, Russia wants to take, besides Donbas, Kharkiv in the northeast and Mykolaiv, Zaporizhzhya and Odesa in the south, which would turn Ukraine into a landlocked country. Ukraine has already asked for more weapons, including artillery and long-range rockets, from the West, apparently to prepare for the coming battles. The U.S. is sending them the Multiple Launch Rocket Systems (MLRS) and the High Mobility Artillery Rocket Systems (HIMARS) — both light, flexible, long-range rocket launchers. All these suggest that there is no immediate plan from any side to end the war.

Haven't the sanctions hit the Russian economy?

They have. Russia's economy is expected to contract this year. But the sanctions and their impact on the economy are unlikely to influence the Kremlin's strategic thinking for a number of reasons.

First, the war and the western response to it appear to have bolstered Mr. Putin's standing in Russia. According to the Levada Centre, an independent research firm, as of April, 82% Russians approve of his presidency. He doesn't face any immediate threat to his grip on power in Russia. Second, despite the sanctions, the Russian economy doesn't face any imminent collapse. The rouble, which U.S. President Joe Biden threatened to run into "rubble", is one of the best performing currencies this year. The sanctions also jacked up commodity prices, especially that of oil and gas, which is helping Russia, a major oil and gas exporter. Europe remains dependent on Russian gas — close to 40% of its gas requirements are met through imports from Russia. Its attempts to diversify its gas imports by buying LNG from countries such as Qatar and Libya have so far been not successful.

Also, the Russian blockade of Ukraine's sea ports is threatening to send food prices soaring which could impact global food supplies and food security. This has prompted several European countries to reach out to Mr. Putin, seeking a solution. Moreover, countries outside the Western alliances have not joined the sanctions, which means Russia is not as isolated internationally as the West claims it is. So Mr. Putin appears to be ready to fight a war of attrition, which could hurt the global economy further.

Is there a peace process?

Both Russia and Ukraine have held multiple rounds of talks, in Minsk as well as in Istanbul, since the war began, but there has been no breakthrough. In the last round of the Istanbul talks, Ukraine had apparently made a peace proposal.

According to media reports, Ukraine proposed a 15-year consultation period for Crimea (during this period Kyiv won't contest Russia's control of the peninsula) and direct talks between Presidents Volodymyr Zelensky and Mr. Putin on the status of Donbas. As a "goodwill gesture", the Russians quickly announced that they were withdrawing troops from the outskirts of Kyiv. But soon after the Istanbul talks were concluded, video footage surfaced showing bodies in Bucha, the northern city that the Russians vacated. U.S. President Joe Boden accused Russia of committing "genocide" in Ukraine. The peace process collapsed.

Now, Mr. Zelensky has once again urged direct talks with Mr. Putin, but Russia, which stated in April that the talks were "at a dead end", says "Ukraine is not serious about ending the conflict". In between, the war continues and Ukraine keeps losing territories.

AN AFFABLE PRAGMATIST

Freshly minted Prime Minister of Australia, Anthony Albanese, is no newcomer to politics. Elected as a member from the division of Grayndler in the State of New South Wales, first in 1996, Mr. Albanese has been a veteran member of Parliament, having served as a Minister in the Kevin Rudd- Julia Gillard governments and was even Deputy Prime Minister for a brief while in the last few months of the Rudd-led Labor government before becoming the Leader of Opposition in May 2019.

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He has working class origins, who lived with his single mother — a recipient of disability pensions — in a Sydney City Council home and is a self-made politician with formative years in the left-wing student politics (Young Labor) that allowed him to later become a member of the left faction of the Labor Party.

As the leader of the party during the 2022 elections, though, Mr. Albanese had tacked closer to the centre, an outcome that was the product of the Labor Party's review following the defeat to the Liberal National Coalition in the 2019 elections. Mr. Albanese's Labor withdrew policies that sought to remove tax concessions to the wealthiest Australians — a legacy of Liberal/National Coalition rule, tried to promote a more pro-business orientation and also ratcheted down its sharp rhetoric on climate change, focussing instead on mending relations with people employed in fossil fuel use sectors such as coal mining. By doing so, Mr. Albanese was hearkening back to the legacy of Bob Hawke and Paul Keating-led Labor governments in the 1980s and 1990s. Mr. Albanese was quoted in an article in The Conversation as saying clearly, "If Labor is successful in the coming federal election, I will take my lead from Bob Hawke and his successor Paul Keating... We must rediscover the spirit of consensus [...] Bob Hawke used to bring together governments, trade unions, businesses and civil society around their shared aims of growth and job creation".

In other words, the Albanese-led Labor platform is expected to tack to the Australian equivalent of the 'New Labour' way promoted by Tony Blair and his successor Gordon Brown in the U.K. Such a positioning helped Mr. Albanese consolidate support within the Labor party.

Centrist position

But was this ploy to take a more centrist position key to the Labor's success? It is difficult to say. By most accounts by election observers in Australia, the Liberal/National Coalition's loss was quite pronounced clearly due to the perceived incompetence of the Scott Morrison leadership, the government's inability to tackle searing problems such as the raging wildfires that devastated many parts of the country, the COVID-19 mismanagement and it's dilly-dallying approach towards tackling climate change. It was to the credit of Mr. Albanese that he was able to utilise a low-key but effective campaign, positioning himself as the sane voice of opposition who offered a constructive critique of the government in power and stressed his affable nature and working class roots to build a broad coalition of support.

Yet, much of the losses for the Liberal/National Coalition were converted into gains for the fledgling Green party and corporate sponsored independents seeking decisive actions against climate change, except in States like Western Australia, where Labor was the beneficiary. As things stand, Labor leads or has won in 75 of the 151 seats in the House of Representatives and would require cooperation with the Greens (4 seats) and independents to pass clear cut legislation. In the upper house (Senate), Labor is clearly dependent upon the Greens (12 seats as opposed to Labor's 26 out of a total of 76) as well.

In sum, the new Labor government could mark a clear shift toward climate-friendly policies, but is expected to take a more cautious approach on economic and strategic matters, which could mean continuity on those issues after nine years of Liberal party rule.

Even so, under Mr. Albanese, the Labor government could take a more expansive role on welfare such as better care for the aged, lower costs of childhood education, gender parity and safety in workplaces, and a greater thrust for the use of renewable energy. But this would, of course, require a push from his colleagues from the Labor Left, and the Greens and progressives in Australian civil society.

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CHINA'S GROWING FOOTPRINT IN THE PACIFIC ISLANDS

The story so far: Wang Yi, the Foreign Minister of China, is currently on an eight-day visit to ten Pacific Island Countries (PICs), and has co-hosted with Fiji the Second China-Pacific Island Countries Foreign Ministers Meeting on May 30, 2022. During the meeting, China's effort to push through a comprehensive framework deal, the draft of which was leaked earlier, failed to gain consensus among the PICs. Though this has raised regional concerns about China's growing footprint in the Pacific islands, it has also been seen as a demonstration of China's limitations in the region.

What is the strategic significance of the PICs?

The Pacific Island Countries are a cluster of 14 states which are located largely in the tropical zone of the Pacific Ocean between Asia, Australia and the Americas. They include Cook Islands, Fiji, Kiribati, Republic of Marshall Islands, Federated States of Micronesia (FSM), Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. The islands are divided on the basis of physical and human geography into three distinct parts — Micronesia, Melanesia and Polynesia. The islands are very small in land area, and are spread wide across the vast equatorial swathe of the Pacific ocean. As a result, though they are some of the smallest and least populated states, they have some of the largest Exclusive Economic Zones (EEZs) in the world. Large EEZs translate into huge economic potential due to the possibility of utilising the wealth of fisheries, energy, minerals and other marine resources present in such zones. Hence, they prefer to be identified as Big Ocean States, rather than Small Island States. In fact, Kiribati and FSM, both PICs, having EEZs larger than that of India. Moreover, these countries have played an important role in major power rivalry as springboards for power projection and laboratories for developing and demonstrating strategic capabilities. The major powers of the colonial era competed with each other to gain control over these strategic territories. The Pacific islands also acted as one of the major theatres of conflict during the Second World War — between imperial Japan and the U.S. Due to the remoteness of these islands from the Soviet Union and major population centres of the world, some of the major nuclear weapon test sites of the U.S., the U.K. and France were located here. In addition, the 14 PICs, bound together by shared economic and security concerns, account for as many number of votes in the United Nations, and act as a potential vote bank for major powers to mobilise international opinion.

What does China seek to achieve from the PICs and how?

China does not have any particular historical linkages to the PICs unlike the Western powers. Therefore, its interest in the PICs is of relatively recent origin, and is linked to China's rise in the past few decades. The PICs lie in the natural line of expansion of China's maritime interest and naval power. They are located beyond China's 'First Island Chain', which represents the country's first threshold of maritime expansion. The PICs are located geostrategically in what is referred to by China as its 'Far Seas', the control of which will make China an effective Blue Water capable Navy — an essential prerequisite for becoming a superpower. At a time when the Quadrilateral Security Dialogue has emerged as a major force in the Indo-Pacific vis-à-vis China, the need to influence the PICs have become an even more pressing matter for China.

Apart from the vast marine richness of the PICs, the Taiwan factor plays a major role in China's Pacific calculus. China, which considers Taiwan to be a breakaway territory, is preparing for what seems like an inevitable military invasion. In this context, it becomes important to break Western domination of island chains of the Pacific which could impede reunification. Wooing the PICs away

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from the West and Taiwan will therefore make the goal of Taiwan's reunification easier for China. It has to be noted here that a zero-sum game has been underway in the past few decades in the Pacific between China and Taiwan in terms of gaining diplomatic recognition. China has been successful in getting diplomatic recognition from 10 out of the 14 PICs through its economic largesse. Only four PICs — Tuvalu, Palau, Marshall Islands and Nauru, currently recognise Taiwan.

What are the implications of China's latest move?

China has increasingly started talking about security cooperation in addition to its economic diplomacy towards the PICs. In April 2022, China signed a controversial security deal with the Solomon Islands, which raised regional concerns. Prior to the current visit of Wang Yi, two draft documents prepared by the Chinese side were leaked, and gained the attention of regional leaders in the Pacific as well as the larger international community. One of the documents is the "China-Pacific Island Countries (PICs) Common Development Vision", and the other is "China-Pacific Islands Five-Year Action Plan on Common Development (2022-2026)". The vision gives a broad proposal about co-operation in the political, security, economic and strategic areas, whereas the action plan outlines the more specific details of co-operation in the identified areas. The secrecy surrounding the draft, and the haste with which it was discussed with the governments of the PICs during the meeting sent worrying signals across the Pacific.

The PICs as a collective did not agree to China's extensive and ambitious proposals, and therefore China failed to get a consensus on the deal. In fact, the Prime Minister of FSM had sent a letter to all the PIC governments prior to the meeting, to consider China's proposals with caution, as they could have negative implications for the sovereignty and unity of PICs and may drag them into major power conflicts in the future. Some have argued that China has acted too boldly and has therefore met with such a debacle. China might have also miscalculated the regional reaction, perhaps led by a monolithic understanding of the PICs after seeing Solomon Islands' positive response earlier this year. However, China can always come back with improvised plan which is more acceptable and use it to further pursue its final objectives incrementally. Moreover, this debacle does not stop China from pursuing bilateral deals of similar nature.

The intensification of China's diplomacy towards the Pacific Islands have made the powers who have traditionally controlled the regional dynamics like the U.S. and Australia more cautious. The U.S. has started revisiting its diplomatic priority for the region ever since the China-Solomon Islands deal. The role played by the U.S. in mobilising opposition against China's proposed deal could not be ruled out as FSM is the only country which recognises China and at the same time is part of the Compact of Free Association with the U.S.. Australia, in the meanwhile, has sent its new Foreign Secretary Penny Wong to the islands for revitalising ties, with promises of due priority and assistance to the PICs.

Wang may leave the Pacific humbled at the end of his visit, but with more insights; the Western powers may have been relieved, but may have turned more vigilant; and the PICs may have become more united than ever before.

SHEHBAZ SHARIF'S GAMBLE

Forget, for a moment, the many problems between India and Pakistan that have persisted into the 75th year of Partition and Independence. For anyone in South Asia and beyond interested in Pakistan as a major state — it has the world's fifth largest population, a valued geopolitical location, a leading role in the Islamic world, and a powerful army equipped with nuclear weapons

— the real question is whether Pakistan can redeem itself. As the seven-week-old Shehbaz Sharif government turns to the International Monetary Fund to arrest the macroeconomic crisis, seeks uninterrupted support from the armed forces until the next elections in the summer of 2023, and tries to reboot its regional and global policies, few can bet on Pakistan's prospects.
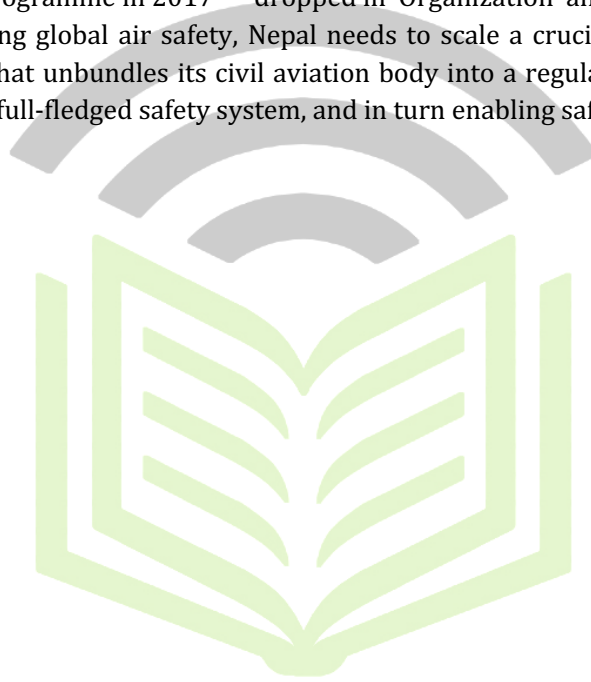
Admittedly, Pakistan has muddled through many crises in its history. But can it manage those that confront it today? Consider, for example, PM Sharif's bet that by turning to the IMF, he can stabilise the economy that many are convinced is headed Sri Lanka's way. Pakistan has been to the IMF before, 22 times to be precise. But none of the attempts to stabilise the economy with the IMF's help have been accompanied by a serious effort to reform and remove the deeper constraints on it. The story this time is unlikely to be any different. Sharif's decision to raise fuel prices and risk popular anger has been viewed as a "bold" move. His predecessor Imran Khan had walked out of the agreement with the IMF a few months ago to prevent a political backlash at home. Sharif's calculus appears to be based less on a credible strategy to revitalise the economy than a bid to appease the army leadership and win its support for staying on in power. But the army is not known to be kind to civilian leaders. There is speculation that it will pull the plug on the Sharif government once it implements the hard and unpopular IMF demands.

On the face of it, Sharif leads a broad-based coalition that has brought together both the Pakistan Peoples Party and the Pakistan Muslim League alongwith a host of other parties. But the army, which has never let a civilian government function effectively, is unlikely to give a free hand to Sharif. It has just dumped Imran Khan after installing him in power in 2018. What is new, though, are the divisions within the army on a range of issues — on managing the domestic political order, rebooting the economy, and rearranging regional and international relations. Imran Khan, who had defied the GHQ on all three fronts, appears to enjoy considerable support among the middle classes as well as within the ranks of the army. To make matters worse, Pakistan's regional and international standing has been in steady decline. This does not augur well for either Pakistan or its neighbours. But Delhi must persist with the engagement of all key formations in the Pakistan polity to prevent bilateral relations from turning worse in the coming days and to forestall unwanted crises.

SAFETY FIRST

The grim images of the wreckage of a Tara Air de Havilland DHC-6-300 Twin Otter aircraft in Nepal have once again highlighted the complexities of ensuring aviation safety in one of the most challenging environments in the world, and in regulating the mountain nation's Short Take-off and Landing (STOL) flights that are a tourist draw. The plane with 22 passengers, including an Indian family, was on an 'air trek' along the scenic yet aerially treacherous Pokhara to Jomsom route on Sunday when it lost radar contact at around 13,000 feet. STOL operations call for well-honed piloting skills, and as 3-D terrain maps of the flight path show, danger lurks in every corner in the form of jagged peaks, narrow passes and fickle weather. The small unpressurised craft used in this sector operate at a ceiling of 13,000 feet and are airborne for a short duration — oxygen supplies are needed for all passengers if flights exceed over 30 minutes above 13,000 ft. Flights are characterised by manoeuvres of 90 degree turns in valleys that have at times just wing length clearance. And as in any competitive tourism market crowded with various STOL operators, there are many pressures that can tell on the crew: commercial stress points such as not having wasted fuel moments and ensuring passenger contentment by pushing the envelope of crucial visual flight rules (VFR). Not following VFR is cited as the main cause of accidents in Nepal's STOL operations.

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So, is Nepal pushing the boundaries in air safety? Data put out by the Civil Aviation Authority of Nepal show domestic air travel having risen by 15.45% in 2018, though registering a dip in 2019-20 largely on account of travel restrictions following the global COVID-19 pandemic. But, interestingly, country data over the past 10 years have shown a sharp drop in the accident rate in general, the only blip being a rise in helicopter incidents with growing copter operations in logistics, relief and rescue, and tourism. In the same timeframe, the STOL sector has seen a higher rate of accidents than trunk route air operations; of the 19 accidents, 16 were STOL aircraft. Accident analysis has shown Controlled Flight into Terrain, Runway excursions and Loss of Control In-flight as the leading causes. A more realistic check lies in the Universal Safety Oversight Audit Programme of the International Civil Aviation Organization monitoring safety oversight obligations by all 193 member-states (as of June 2020), in which Nepal's scores — it last participated in the programme in 2017 — dropped in 'Organization' and 'Accident Investigation'. In an era of improving global air safety, Nepal needs to scale a crucial summit by working on pending legislation that unbundles its civil aviation body into a regulator and service provider, paving the way for a full-fledged safety system, and in turn enabling safer STOL operations.

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NATION

IS THE INDO-PACIFIC BLOC LIMITED IN SCOPE?

The story so far: The launch this week of U.S. President Joseph Biden's new trade initiative for the region, the Indo-Pacific Economic Framework for Prosperity (IPEF), which was witnessed by leaders of 13 countries, including Prime Minister Narendra Modi, was heralded as the start of a new economic bloc in the region, one which could be seen as a counter to China. The IPEF, which comprises a "baker's dozen" of Australia, Brunei, India, Indonesia, Japan, Republic of Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand, the United States and Vietnam, represents 40% of the world's GDP. However, the launch of the IPEF has also been accompanied with some scepticism, not least from within the U.S., about just what it can deliver, given that officials made it clear that it is not a traditional trade deal.

What is the IPEF, if not a trade deal?

For the past few months, the Biden administration has been working with countries in the Indo-Pacific region to try and bring them on board with the idea of an alternative trading arrangement led by the U.S. The four pillars that the IPEF framework rests on are 'Connected Economy', setting standards on digital trade, cross-border data flows and data localisation; 'Resilient Economy', with supply chain commitments and guarding against price spikes; 'Clean Economy', with commitments on clean energy, decarbonisation, and infrastructure to cut emissions; and 'Fair Economy', in terms of enforcing regimes that cut down on money laundering and corruption, and ensure fair taxation. As a result, the IPEF is more about standard setting and facilitating trade and will not involve more market access for its members. Nor will it negotiate lower tariffs. Officials say as the negotiations proceed, they may incorporate more ideas, but have also stressed that members can take a "pick and choose" attitude towards joining only the pillars that interest them. While this concept has been developed in order to be more inclusive and attract more members, it also has raised questions about the seriousness of the U.S. proposition.

Why is the U.S. promoting this bloc?

The IPEF is part of the U.S.'s more than a decade old "Pivot to Asia" programme, re-imagining the Indo-Pacific as a geographic construct including America. The Quad, consisting of India, Australia, Japan and the U.S., is part of the same pitch made originally by the Obama administration, and then re-energised by the Trump administration. The IPEF is also a way for the U.S. to keep its foot in the door on trade in Asia, after the Trump administration walked out of the 11-member Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP, originally the TPP) in 2017 that includes Canada, Mexico and countries in Asia and South America (China has applied to be a member).

The U.S. is also not part of the other big trade bloc, the Regional Comprehensive Economic Partnership (RCEP), that includes China, all 10 members of the ASEAN, as well as Australia, Japan, New Zealand and South Korea, a deal India walked out of in 2019. By announcing a new arrangement that includes India, seven of 10 ASEAN members, and a majority of the RCEP members, the Biden administration is seeking to signal that it has not been cut out of trade in the region. The IPEF also clearly has a geopolitical edge — as it doesn't include China, although the Biden administration stopped short of including Taiwan in the launch, as many U.S. Congress members had demanded.

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Given that the U.S. itself is deeply divided on free trade issues, the U.S. Government has chosen not to make the IPEF a trade deal, which would need congressional clearance. At a briefing just prior to the launch, U.S. Trade Representative Katherine Tai said the government had learnt a "strong lesson" from the TPP experience. "With respect to TPP, I think that the biggest problem with it was that we did not have the support at home to get it through...despite Herculean efforts, it could not be gotten through Congress," Ms. Tai explained.

Finally, the IPEF is part of the Biden administration's way of showing that despite its current focus on the war in Europe, and hot pursuit of Russia through economic sanctions, it has not lost sight that Asia, and the challenge from China, is prominent in the U.S. agenda.

What's in it for India?

For the Modi government too, which walked out of the RCEP after eight years of negotiations, the membership of IPEF keeps it in the room on Asian trading arrangements, and is a way of blunting criticism that it is overtly protectionist. In the past year, the government has made a virtual U-turn from its previous antagonism towards bilateral trade agreements. It has concluded its first-ever trade deal in its tenure with the United Arab Emirates, and is in active negotiations to complete deals with the U.K., Australia and Canada.

The IPEF's non-specific and flexible nature also suits India, which has held strong views on a range of issues like labour standards, environmental restrictions on fossil fuels, and data localisation.

India's inclusion also comes from a geopolitical need to counter China's virtual control over Asian trade, given that the RCEP seeks to eliminate about 90% of tariffs amongst members, particularly given India's bilateral issues with China since the 2020 transgressions by the Chinese army at the Line of Actual Control.

For the U.S., and other Quad members Japan and Australia, India's inclusion, which had been tentative in the run-up to the IPEF launch, is important. Although India may not be an ideal participant under current conditions, its exclusion from the IPEF would raise questions about how 'Indo' the Indo-Pacific Economic Framework truly is," remarked a brief on IPEF released by the Washington-based Center for Strategic and International Studies (CSIS) in April this year. It is significant that India is the only country in South Asia which has been invited to the grouping, and the U.S. plans to expand the membership further will be watched closely.

How has China responded to the IPEF?

Clearly, China has been deeply critical of all U.S. initiatives in the region, as a part of a strategy to "contain China". The Chinese government has accused the U.S. of building an "Asian NATO" in the Quad, of nuclearising the region through the Australia-U.K.-U.S. security pact AUKUS, and has also trained its guns on the IPEF, dismissing its utility, but also warning, as Chinese Foreign Ministry spokesperson Wang Wenbin did, that "many countries in the region are worried about the huge cost of 'decoupling' with China."

"The U.S. is taking a selective approach in acceding to regional cooperation initiatives. Now the U.S. proposed the IPEF only to start something new to serve its own interests," Mr. Wang said. Already, three members of ASEAN seen as closest to China: Myanmar, Cambodia and Laos, have chosen not to join IPEF.

What about other criticisms of the arrangement?

The biggest criticism of IPEF in other capitals in Asia is that it is still too vague and lacks enough substance. Indian officials said India's participation as an "initial founder" means that it will go along with the negotiations and see where they lead, but, like with RCEP, joining the launch is not the same as joining the eventual IPEF agreement negotiated, and much will depend on whether India's specific red-lines on market protection and services are included.

There is also some scepticism of U.S. initiatives that don't carry any "dollar value". With market access to U.S. and tariff reductions off the table, there are questions about how much "skin in the game" Washington will bring. Previous initiatives like the Blue Dot Network, and the Build Back World initiative with G-7 partners have not brought in the sort of funding required for emerging economies in the region. A Quad initiative for $50 billion in financing infrastructure projects over five years seems unambitious, compared to U.S. spending in other regions, and even on Ukraine in the past few months.

Finally, in selling the IPEF back home in Washington, the U.S. appears to be making the deal more about benefits to the U.S. economy than to the Indo-Pacific region as a whole. U.S. National Security Adviser Jake Sullivan's remarks in a press briefing, that the "IPEF is part of President Biden's commitment to putting American families and workers at the centre of [U.S.] economic and foreign policy, while strengthening our ties with allies and partners for the purpose of increasing shared prosperity," raised eyebrows.

LOOKING AT THE UN REPORT ON THE TALIBAN REGIME

The story so far: A new report from the Analytical Support and Sanctions Monitoring Team of the United Nations Security Council (UNSC) says that foreign terrorist organisations continue to enjoy safe haven under the new Taliban regime. The report adds that due to financial constraints, and possibly under political pressure not to embarrass the Taliban internationally at this juncture, the terrorist groups are currently in consolidation mode and not likely to launch major attacks outside Afghanistan before 2023.

What is the mandate of the monitoring team and how did it collect data?

The monitoring team assists the UNSC sanctions committee. Its report, circulated among committee members, informs the formulation of UN strategy in Afghanistan. India is currently the chair of the sanctions committee, which comprises all the 15 UNSC members. This report — the 13th overall — is the first since the Taliban returned to power in August 2021. The UN team could not visit Afghanistan for evidence-gathering. This is the first of its reports not informed by official Afghan briefings. Instead, the team relied on consultations with UN member states, international and regional organisations, private sector financial institutions, and the work of bodies such as the United Nations Assistance Mission in Afghanistan.

What does the report say about terrorist organisations that pose a threat to India?

Two India-focussed terrorist groups, Jaish-i-Mohammed (JiM) and Lashkar-e-Taiba (LeT), are reported to have training camps in Afghanistan. While the JiM "maintains eight training camps in Nangarhar, three of which are directly under Taliban control," the LeT was "said to maintain three camps in Kunar and Nangarhar". Both the groups enjoy close links with the Taliban leadership, with the LeT having a history of providing finance and training expertise to Taliban operations.

The report also says that the al-Qaeda in Indian Sub-continent (AQIS) has 180-400 fighters in Afghanistan. "Fighters included nationals from Bangladesh, India, Myanmar and Pakistan," says the report. While AQIS capabilities were "assessed as still weakened from losses as a result of the October 2015 joint United States-Afghan raid in Kandahar's Shorabak district", the outfit has also been forced to adopt a "less aggressive posture" due to financial constraints. The report notes that the name change of the AQIS magazine from 'Nawa-i-Afghan Jihad' to 'Nawa-e-Gazwah-e-Hind' suggests a "refocussing of AQIS from Afghanistan to Kashmir".

What about internal tensions?

The foremost internal division in the Taliban is between the moderate and hardline blocs. While the moderate bloc) wants working relationships with foreign partners and integration with the international system, the hardliners (consisting of senior Taliban leaders centralised around Hibatullah Akhundzada) have a more ideological stance, with little interest in international relations. Independent of both these blocs is the Haqqani Network which, while more aligned with the hardliners, is inclined towards a pragmatic rather than ideological approach to securing Taliban interests. According to the report, under the command of Hibatullah, various Taliban factions are manoeuvring for advantage, with the Haqqani Network cornering most of the influential posts in the administration.

How are ethnic dynamics in the administration?

The report believes the Kandahari (Durrani) Taliban to be in the ascendancy among the Taliban leadership, with Pashtuns getting precedence over non-Pashtuns. Several key Tajik and Uzbek commanders in the north have been replaced with Pashtuns from the south, and these decisions have come against the backdrop of an "organised campaign by Pashtuns to dislodge ethnic Tajik, Turkmen and Uzbek communities from rich agricultural land in the north".

Internal cohesion within the Taliban was easier to maintain during the insurgency period, when there was a "compelling common cause to expel foreign forces from Afghanistan", the report notes. But now that they are in power, "the Taliban's core identity of a Pashtun nationalist cause dominated by southern Taliban has again come to the fore, generating tension and conflict with other ethnic groups."

What about other terrorist groups?

Tehreek-e-Taliban Pakistan (TTP) constitutes the largest component of foreign terrorist fighters in Afghanistan, with their numbers estimated at 3,000-4,000, and mostly located along the east and south-east Afghanistan-Pakistan border areas. Among all the foreign extremist groups in Afghanistan, it is the TTP that has benefited the most from the Taliban takeover. The report also notes that the Kabul airport attack of August 26 has elevated the Islamic State in Iraq and the Levant-Khorasan (ISIL-K) to be the most prominent Da-esh affiliate in the region. While its activity declined towards the end of 2021, the group has grown in strength through prison releases and new recruitments. Meanwhile, al-Qaeda continues to enjoy a close relationship with the Taliban, celebrating the latter's success by "renewing its pledge of allegiance to Hibatullah". Noting that neither ISIL-K nor the al-Qaeda are "believed to be capable of mounting international attacks before 2023 at the earliest," the report concludes that their presence, along with the presence of other terrorist groups on Afghan soil, remain a matter of grave concern for neighbouring countries and the wider international community.

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INDIA-PAKISTAN TIES AND THE MIRROR OF 2019

An official delegation from Pakistan was in New Delhi on Monday to hold talks with its Indian counterparts under the aegis of the Indus Water Treaty. In March, the Indians had gone to Islamabad to attend the previous meeting. Starting from February, India has been sending through Pakistan consignments of wheat, via the World Food Programme, to the Taliban-run Afghanistan.

Evidently, channels of communication between the two governments are working and open hostility has subsided, if not vanished completely. In his speeches, Prime Minister Narendra Modi no longer targets Pakistan as an enemy country or invokes it to target politicians of Opposition parties, a regular feature till a few years ago. This is not because of a sudden change of heart or out of great love for Pakistan. The change has been driven by realist considerations that surfaced during the Ladakh border crisis on the Line of Actual Control with China in the summer of 2020.

China forced the hand

The border crisis in Ladakh raised the spectre of a collusive military threat between China and Pakistan. As various military leaders have since stated, such a challenge cannot be effectively dealt with by the military alone and would need all the instruments of the state — diplomatic, economic, informational, and military — to act in concert. To prevent such a situation, India's National Security Adviser Ajit Doval opened backchannel talks with Pakistan, using the United Arab Emirates (UAE) as an interlocutor.

This was confirmed by the UAE's Ambassador to the United States, as the Indian and Pakistan armies agreed to a reiteration of the ceasefire on the Line of Control (LoC) in Kashmir in February 2021.

It was a U-turn for the Modi government, after the dilution of Article 370 in Jammu and Kashmir in August 2019, and the number of ceasefire violations along the LoC had reached a record high in 2020. In line with Home Minister Amit Shah's statement in Parliament vowing to wrest back Pakistan-occupied Kashmir — and Aksai Chin from China — every other politician from the Bharatiya Janata Party politician was threatening Pakistan. By then, the Indian Army was boasting of its firepower on the LoC.

It thus came as a surprise that Mr. Doval had agreed in his backchannel talks with the Pakistan Army to undertake certain actions in Kashmir as part of a mutually agreed road map. Reports emanating from Pakistan Army Chief General Qamar Javed Bajwa made it clear that two actions by India were a precondition for any further steps by Pakistan: restoration of statehood to Jammu and Kashmir; and an announcement of no demographic change in the Kashmir Valley.

As the backchannel talks dragged on, the Indian side expressed its political inability to initiate these actions. With Imran Khan (now former Prime Minister) refusing to move ahead, it created a stalemate. By then, limited disengagement had occurred with the Chinese forces in Ladakh, thus stabilising the situation along the LAC to some extent. India gave assurances to Pakistan when the threat of escalation with China became very high in late 2020 following the Indian Army's occupation of certain heights in the Kailash range in Ladakh. Pakistan had then not shown any inclination to mobilise its forces to the LoC, which would have created a nightmare scenario for the Indian security establishment. Even if there was no further progress in bilateral ties, the Indians were happy with this new status quo with Pakistan while the border crisis with China was

alive. This bought them time to further consolidate the changes in Kashmir undertaken in August 2019.

Kashmir suffers

The delimitation of Assembly constituencies in Kashmir has been completed. The fresh making of an electoral map disadvantages Kashmiris, and new Assembly elections seem but a matter of time. That would bring closer the BJP's dream of installing a Hindu Chief Minister in India's only Muslim-majority region, an attempt made earlier after the sacking of Mehbooba Mufti as Chief Minister. If these efforts are successful, the statehood to Jammu and Kashmir could also be restored.

However, despite a harsh security-centric approach by the administration, violence in the region has gone up in the past year or so. All the resources of the Indian state have now been devoted towards a successful conduct of the Amarnath Yatra, with a record participation this year, even as the same administration bans Friday prayers at the iconic Jamia Masjid in Srinagar using the flimsiest of excuses. Congregational prayers were disallowed at the historic mosque last Friday after the sentencing of Kashmiri separatist leader Yasin Malik. His sentencing also earned a strong statement of condemnation from the Organisation of Islamic Cooperation (OIC) that was rejected by India's Foreign Ministry. Things have changed drastically from February 2019, when the then External Affairs Minister Sushma Swaraj was invited as the "guest of honour" by the OIC.

Islamabad's rhetoric helps the Modi government make its case domestically that the crisis in Kashmir is solely of Pakistan's making. While Pakistan's use of violence by sending weapons and militants has been a major factor, exploiting it to overlook the political grievances of Kashmiris thwarts a lasting solution. The idea that Kashmiris have no agency of their own and are instruments in the hands of the Pakistan military defies both history and common sense.

No environment in Pakistan

The recent change of government in Pakistan, including Imran Khan's removal, is seen as a positive in New Delhi. The official Indian establishment has had close ties with both the Pakistan Muslim League-Nawaz and the Pakistan Peoples Party that are now part of the government. There are Indian businessmen who have acted as interlocutors with the Sharif brothers on behalf of the Modi government. Mr. Modi had himself made a sudden stopover at the Sharif household in December 2015 to attend a family wedding, and subsequently allowed Inter-Services Intelligence (ISI) officials to visit Pathankot airbase for terror attack investigation.

Officials on both sides argue that there are some low-hanging fruits which can be plucked the moment a political go-ahead is given. These include a deal on the Sir Creek dispute, an agreement for revival of bilateral trade, return of High Commissioners to the missions in Delhi and Islamabad, and build-up of diplomatic missions to their full strength. Demilitarisation of the Siachen glacier is still seen to be off the table as the Indian proposal is believed to be unacceptable to the Pakistan Army.

The environment in Pakistan is, however, not conducive for any such move. Imran Khan is garnering big crowds in his support and has put the Shehbaz Sharif government and Pakistan Army under pressure. With the economy in doldrums, there is little room for manoeuvre with the new government. Even an announcement of talks with India, without New Delhi conceding anything on Kashmir, will provide further ammunition to Imran Khan. The current moment, where New Delhi and Islamabad seem willing to move forward but are restrained by Pakistan's

domestic politics, somewhat mirrors the lawyers' protest against General Musharraf in 2008 which derailed the Manmohan-Musharraf talks after they had nearly agreed on a road map.

New environment

A window of opportunity would possibly open in Pakistan after the next elections, which are scheduled next year but could be held earlier. By then, the Pakistan Army would have a new army chief, as Gen. Bajwa's three-year extension comes to an end in November. Gen. Bajwa's successor may look at things differently. By then, if Jammu and Kashmir has a new State government after elections and the border crisis with Beijing is resolved, the ground would have completely shifted in India. As Mr. Modi goes for another re-election in 2024 with little to show on the economy front, a totally different dynamics on Pakistan would be at play in India.

Following the Balakot airstrike (2019), Pakistan was at the forefront of Mr. Modi's election campaign in 2019. In a recent book chapter, Mr. Doval has written that Balakot "blew away the myth of Pakistan's nuclear blackmail". For the next strike on Pakistan, "domain and level will not be limiting factors", he wrote.

Mr. Doval does not mention it but last time, India lost a fighter aircraft, had its pilot in Pakistani captivity, shot down its own helicopter killing seven men, had another near-miss friendly fire accident over Rajasthan, and the two nuclear-armed countries threatened to shoot missiles at each other. That was in 2019. A reckless act in the future may have even more dire consequences. Unless that is what India desires, the Modi government must shift course from the belligerence it has displayed and profited from earlier in favour of proper diplomatic and political engagement with Pakistan.

EXPLAINED: HOW INDIA, BANGLADESH ARE REBOOTING THEIR RAIL LINK

Two years after they were stopped due to the onset of the pandemic on March 28, 2020, passenger train services between India and Bangladesh resumed Sunday with the Bandhan Express setting off from Kolkata for Khulna and the Maitree Express starting its run from Dhaka for Kolkata. A third train, the Mitali Express, will be flagged later this week by Railways ministers of the two countries.

The trains

The Bandhan Express was resumed by rebooting a long-forgotten rail link between Kolkata and the industrial hub of Khulna, the third-largest city of Bangladesh. In 1965, this route was served by the Barisal Express, which was stopped due to the India-Pakistan war. The Narendra Modi government along with the Sheikh Hasina regime restarted that with Bandhan in 2017.

The Bandhan Express was the second train to be flagged off after the introduction of Maitree Express between Kolkata and Dhaka Cantonment in April, 2008. It covers the distance between Kolkata and Khulna via Petrapole and Benapole border route to cater to the demands of the people from both the countries.

The Maitree Express has been a success since its launch. The tri-weekly service between Kolkata and Dhaka used to run with 90 per cent occupancy. The train has a capacity to carry 456 passengers, the same as Bandhan Express.

The Bandhan Express has AC Chair Car and AC First Class coaches. On Sunday, only 19 passengers were on board the Bandhan, but officials said the numbers would increase.

The Mitali Express will connect New Jalpaiguri in North Bengal with Dhaka. This train was announced by PM Modi during his visit to Dhaka in March, 2021.

The Bandhan Express was resumed in 2017 by rebooting a long-forgotten rail link between Kolkata and the industrial hub of Khulna.

Beyond passenger travel

The governments of both the countries have been working towards strengthening the rail link between them, and not just through passenger trains.

In August 2021, the two sides started regular movement of freight trains between the newly-restored link between Haldibari in India and Chilahati in Bangladesh.

The Haldibari-Chilahati rail link between India and the then East Pakistan was also operational till 1965 and stopped due to the war. This was part of the broad gauge main route from Kolkata to Siliguri at the time of Partition. The two sides envisage at least 20 freight trains to cross the border per month on this link.

Rail infrastructure

Once part of a single, seamless railway network under British rule, trains continued to pass between the two countries even after the Partition. The infrastructure to connect the two sides through railways was, therefore, largely present.

Policymakers on both sides viewed this as an opportunity to deepen diplomatic ties using cross-border movements of goods and passengers.

Five rail links have so far been rebooted between India and Bangladesh.

They include Petrapole (India)-Benapole (Bangladesh), Gede (India)- Darshana (Bangladesh), Singhabad (India)-Rohanpur (Bangladesh), Radhikapur (India)-Birol (Bangladesh) and the Haldibari-Chilahati link.

Ordinarily, stone chips, ballasts, rice etc. have been carried to Bangladesh. Railway PSU CONCOR has also started container cargo with such Fast Moving Consumer Goods of private clients. Typically the idea is to establish faster and cheaper freight link by weaning them away from the sea route.

Last year, the Eastern Railway facilitated the import of de-oiled soya cakes from Bangladesh.

In October last year, around 1.2 million tonnes of the commodity was transported by rail, instead of the usual route between the Nhava Sheva port and Land Customs Stations, Petrapole Port.

RESERVATION IN PUBLIC EMPLOYMENT

The jurisprudence of reservation relies on the symbiotic coexistence of constitutionally guaranteed equality of opportunity in public employment under Article 16 (1) of the Constitution of India and classifications thereunder various clauses of the same article, especially Article 16(4) and Article 16 (4 A), which are in the nature of facilitating provisions, vesting a discretion on the

government to consider providing reservations for the socially and educationally backward sections of the society and to provide reservation in promotion to Scheduled Castes and Scheduled Tribes, respectively.

Reservation not a fundamental Right

It is a settled law, time and again reiterated by the Supreme Court, that there is no fundamental right to reservation or promotion under Article 16(4) or Article 16(4 A) of the Constitution, rather they are enabling provisions for providing reservation, if the circumstances so warrant (Mukesh Kumar and Another vs State of Uttarakhand & Ors. 2020).

However, these pronouncements no way understate the constitutional directive under Article 46 that mandates that the state shall promote with special care the educational and economic interests of the weaker sections of the people and in particular Scheduled Castes and Scheduled Tribes. In fact, sensitivity of the welfare state towards the weaker sections over decades resulted in the gradual expansion of canopy of reservation in the form of increasing classifications under Article 16, a set of actions that created a wave of litigation by which resulted in the ever-evolving jurisprudence of affirmative action in public employment.

The Mandal storm and Indra Sawhney

Reservation in employment which was otherwise confined to Scheduled Castes and Scheduled Tribes got extended to Other Backward Classes as well on the basis of the recommendations of the Second Backward Class Commission as constituted, headed by B.P. Mandal.

The recommendation of Mandal Commission (1980) to provide 27% reservation to Other Backward Classes in central services and public sector undertakings, over and above the existing 22.5% reservation for Scheduled Castes and Scheduled Tribes, was sought to be implemented by the V.P. Singh Government in 1990 and the same was assailed in the Supreme Court resulting in the historic Indra Sawhney Judgment (1992).

In the judgment, a nine-judge bench presided by Chief Justice M.H. Kania upheld the constitutionality of the 27% reservation but put a ceiling of 50% unless exceptional circumstances warranting the breach, so that the constitutionally guaranteed right to equality under Article 14 would remain secured.

The Court dwelled on the interrelationship between Articles 16(1) and 16(4) and declared that Article 16(4) is not an exception to article 16(1), rather an illustration of classification implicit in article 16(1).

While Article 16(1) is a fundamental right, Article 16(4) is an enabling provision. Further, the Court directed the exclusion of creamy layer by way of horizontal division of every other backward class into creamy layer and non-creamy layer.

The Constitution (Seventy-seventh Amendment) Act, 1995

In Indra Sawhney Case, the Supreme Court had held that Article 16(4) of the Constitution of India does not authorise reservation in the matter of promotions. However, the judgment was not to affect the promotions already made and hence only prospective in operation, it was ruled.

By the Constitution (Seventy-seventh Amendment) Act, 1995, which, Article 16(4-A), was inserted to provide that "nothing in this article shall prevent the State from making any provision for

reservation in matters of promotion to any class or classes of posts in the services under the State in favour of the Scheduled Castes and the Scheduled Tribes which, in the opinion of the State, are not adequately represented in the services under the State".

Later, two more amendments were brought, one to ensure consequential seniority and another to secure carry forward of unfilled vacancies of a year, the former by way of addition to Article 16(4 A) and the latter by way of adding Article 16(4 B).

A five-judge bench of Supreme Court declared the 1995 amendment as not vocative of basic structure of the Constitution but laid down ceratin conditions which included the collection of "quantifiable data showing backwardness of the class and inadequacy of representation of that class in public employment". . The bench held that the creamy layer among Scheduled castes and tribes is to be excluded from reservation.

In the aforementioned case, a constitution bench of Supreme Court was called on to examine wisdom of the 2006 judgment in the light of the constitutionally recognised socio-economic backwardness of the Scheduled Castes and Scheduled Tribes which may not require any further substantiation. It was also contended that the requirement to identify creamy lawyer among Scheduled Castes and Scheduled tribes fell foul of Indra Sawhney decision. The constitution bench invalidated the requirement to collect quantifiable data in relation to Scheduled Castes and Scheduled Tribes but upheld the principle of applicability of creamy lawyer in relation to Scheduled Castes and Scheduled Tribes. Jarnail Singh judgment authored by Justice Rohinton Nariman indicates a critical turn in the jurisprudence of reservation.

The Constitution (103rd Amendment) Act, 2019

The 10% reservation for Economically Weaker Sections (EWS), other Scheduled Castes, Scheduled Tribes and backward classes for government jobs and admission in educational institutions is currently under challenge before the Supreme Court which has referred the same to a constitution bench. The adjudication awaited in this regard may also turn to be a critical milestone in the jurisprudence of reservation as traditional understanding of backwardness is broadened to specifically include economic backwardness without social backwardness as is traditionally seen.

Despite the Indra Sawhney ruling, there have been attempts on the part of many States to breach the rule by way of expanding the reservation coverage and the Maharashtra Socially and Educationally Backward Classes Act 2018, (Maratha reservation law) came under challenge before the Supreme Court which referred the same to a bench of five judges and one question was whether the 1992 judgment needs a relook.

Interestingly, the Supreme Court not only affirmed the Indra Sawhney decision, but also struck down Section 4(1)(a) and Section 4(1)(b) of the Act which provided 12% reservation for Marathas in educational institutions and 13% reservation in public employment respectively, citing the breach of ceiling. "The 2018 Act as amended in 2019 granting reservation for Maratha community does not make out any exceptional circumstance to exceed the ceiling limit of 50% reservation,", declared the apex Court. This judgment is likely to rein in the propensity on the part of some State governments to blatantly disregard the stipulated ceiling on electoral grounds rather than any exceptional circumstances as conceived by the constitution bench. It is pertinent to note that several States such as Maharashtra, Karnataka, and Andhra Pradesh had made submissions before the Supreme Court against any upper limit on reservation.

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THE BIHAR GOVERNMENT'S CASTE-COUNT

The story so far: On Thursday, the Bihar Cabinet approved a proposal to carry out a caste-based 'count' in the State. Stopping short of calling it a census, the Janata Dal (United) government, which is an ally of the Bharatiya Janata Party (BJP), said the State would spend its own resources for the exercise. The BJP at the Centre has been against holding a caste census, but Chief Minister Nitish Kumar and the JD(U) had been pushing for it. All political parties of Bihar, including the State BJP, had proposed conducting a caste count.

When will the exercise begin?

Details are awaited but Mr. Nitish Kumar said the exercise will be time-bound and that its report will be published. The Union Government had, earlier, snubbed the Bihar government's request for a caste census on the grounds that it would be a "divisive exercise". However, the State BJP members participated in the all-party meeting over the issue.

Why do all political parties support it in Bihar?

Almost all political parties in Bihar identify themselves with a particular caste, sub-caste or community for representation, and leaders cannot afford to take their political identity out of that caste or group. The objective behind this demand is to bring out the recent changes in caste groups and how resources may be best shared. The data will help the State government understand the exact population of various caste groups and assess the socio-economic development in every group, and the welfare schemes needed for their benefit.

Why is the BJP at the Centre against a caste census? What about the State unit?

The Union Government has categorically ruled out conducting a Socio-Economic Caste Census (SECC), stating that a caste census (except that for Scheduled Castes and Scheduled Tribes done traditionally) is unfeasible, "administratively difficult and cumbersome." In the case of Bihar, the BJP's central leaders feel that the demand for a caste census in the State is an attempt to revive Mandal politics by identifying castes and sub-castes and their present status for electoral benefits. For the party, the upper castes, which according to a rough estimate comprise 14% of the population, largely constitute its vote bank, and it fears that if there is a caste census the number of other castes, sub-castes and communities will be known and other parties who claim to represent different subsets of castes might unite against them politically and electorally. Months back senior BJP leader from Bihar and Union Minister of State for Home Affairs Nityanand Rai had told Parliament that a caste census could not be carried out. The party's national spokesperson Guru Prakash Paswan said a caste census alone would not ensure social justice; but the party's Rajya Sabha member and former Deputy Chief Minister of Bihar Sushil Kumar Modi has been backing a caste census through his social media posts. Mr. Sushil Modi even said that the BJP always supported the idea within and outside the State Assembly. Again, the State BJP chief Sanjay Jaiswal recently said, "nothing happens in BJP without the will of the central party leadership". The BJP's ruling alliance partner JD(U) president Rajiv Ranjan Singh alias Lalan Singh pointed out that "the BJP in Bihar was part of a House resolution on caste census" . The Bihar legislature, earlier, in 2019 and 2020, had passed a resolution for a caste-based census in the State. After Thursday's Cabinet meeting, the Nitish Kumar government said there would be a 'ganana' or count, and refrained from calling it a census.

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What are the benefits of a caste count?

Social equality programmes and welfare measures cannot be successfully implemented without comprehensive data and for this a caste count is necessary in a State known to be fragmented into several castes, sub-castes, groups and communities. In a modern state, a count of every category of citizens is necessary so that they can get the benefit of all welfare measures, says political analyst Ajay Kumar. In the absence of such data, there is no proper estimate for the population of other backward classes (OBC)s, extremely backward classes (EBCs) and several other groups within them, he added. A caste-based count goes a long way in bringing a measure of objectivity to the debate on reservations, according to Mr. Ajay Kumar. However, Sudhanshu Kumar, an associate professor at the Centre for Economic Policy and Public Finance, Patna, said, "if the objective of conducting a caste-based count is to get the caste distribution of the population, it does not require a costly exercise like a census. A proper statistical processing or analysis of the information with the government is sufficient for the purpose of public policy design. The usual Census data already provides information useful for formulating public policy."

Have such exercises happened in other States?

The Tamil Nadu government has appointed a commission to formulate a methodology to collect caste-wise particulars of its population and use that to come up with a report. States like Karnataka, Odisha and Telangana have carried out caste counts, calling it a "socio-economic survey".

DOSES OF STATECRAFT TO MEET INDIA'S CHALLENGES

The war in Europe, involving Russia and Ukraine — with Kyiv being backed by western powers and the North Atlantic Treaty Organization (NATO) — and the political turmoils in South Asia dominate newspaper headlines today. This has pushed the debate on India's many internal security problems on the backburner. This is unfortunate, for many long-standing security problems have a propensity to wax and wane and seldom seem to go away.

Limitations of a security vigil

While the country's security agencies do maintain a tight vigil, what is seldom realised is that security agencies can only deal with the immediate threat. Long-term solutions require the use of statecraft. Additional doses of security whenever a situation arises are at best a temporary solution. This does not amount to problem solving. To change the mindsets of both the authorities and those challenging the existing order, it may be first necessary to admit that more and more security has its limitations. The next step is even harder, viz., to admit that the forces threatening the state have lately become nimbler in adopting new technologies and modes of warfare.

In many countries, both the authorities and security agencies are beginning to acknowledge the importance of resorting to statecraft as a vital adjunct to the role played by the security agencies. Statecraft involves fine-grained comprehension of inherent problems; also an ability to quickly respond to political challenges. It further involves strengthening the ability to exploit opportunities as they arise, and display a degree of political nimbleness rather than leaving everything to the security agencies. In short, it entails a shift from reposing all faith in the security establishment to putting equal emphasis on implementation of policies and programmes. In effect, it shifts the emphasis to formulating strategies that favour political deftness, strength and agility, after the initial phase.

Upheaval in Kashmir

Two prime examples which provide grist to the above proposition are the prevailing situation in Jammu and Kashmir and the continuing problem involving Maoists. While Jammu and Kashmir has been a troubled region ever since 1947, the situation has metamorphosed over the years — at times tending to become extremely violent followed by spells of near normalcy. No proper solution has emerged to a long-standing problem.

The ongoing violence in Jammu and Kashmir which started almost 18 to 20 months ago is an instance in point. Political angst over the revocation of Article 370 of the Constitution is possibly one of the reasons for local support being available for the current crop of Jammu and Kashmir militants. A majority of them are believed to be home-grown militants, though backed by elements from across the border in Pakistan. Irrespective of the reasons for the latest upsurge in violence, what is evident is that Jammu and Kashmir has again become the vortex of violence, specialising currently on targeted killings of outsiders, mainly Kashmiri Pandits.

Migrant Kashmiri Pandits returning to Jammu and Kashmir have, no doubt, been given certain concessions, including government jobs. This might have acted as provocation, but what is equally disturbing is the targeted killings of police personnel, many of whom were on duty while some others were on leave. Information filtering out of government vaults suggests that terrorists may have infiltrated the official machinery. They also appear to have access to data banks of the police and security agencies. All this is leading to an atmosphere of uncertainty. Concerns exist that this year's Amarnath Yatra (beginning end June) could well be one of the targets of the militants. If this were to happen, it might well result in a crescendo of violence, leading to large-scale upheaval across Kashmir.

Evidently, the doctrine of containment pursued by the Jammu and Kashmir police and security agencies is not having the desired effect. Security analysts believe that a sizeable segment of the new cadres fall into what they perceive as 'unpredictable', and this further aggravates the situation. The history of Jammu and Kashmir is replete with instances where a sizeable presence of such 'unpredictable' elements has tilted the scale in favour of greater violence. What is also disturbing is that strategies intended for one set of militants can seldom be applied to newer elements, making it more difficult to contain the spread of violence. In Jammu and Kashmir today, as also elsewhere, there is no all-in-one grand strategy to deal with the situation. The missing ingredient is statecraft which alone can walk in step with the changing contours of a long-standing problem.

The Maoist shadow

While problems seem to be mounting for the security establishment in Jammu and Kashmir as of now, across several heartland States of India, the police face a different kind of threat. Of all the strands of the militancy in India, Maoists or Naxalites stand apart as being the only ones with strong ideological underpinnings. Notwithstanding its ideological veneer, Maoists/Naxalites nevertheless tend to indulge in mindless violence carrying out brutal killings. The original Maoist leaders in Bengal, Andhra Pradesh and Kerala (in the late 1960s and early 1970s) who were inspired by Charu Mazumdar who talked of a 'Spring Thunder over India' (followed by his claim to have lit a spark to initiate a 'prairie fire') have since been replaced by lesser leaders with few ideological pretensions.

The combination of ideological ideation and brutal killings has often confused and confounded the police, intelligence and security establishments of the States and the Centre. In that sense, the

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Maoists represent the biggest challenge to the idea of India. While railing against the use of State violence, and from time to time displaying a willingness to hold peace talks with both the State and Central governments, the Maoists have seldom displayed a commitment to peaceful ways. New adherents, thanks to its ideological underpinnings, are meanwhile readily available, and this further perplexes the authorities who often tend to claim 'that Maoism is on its last legs'. More than any other militant or violent movement in the country, curbing the Maoist menace will require considerable doses of statecraft, as many of the purported demands of the Maoists find an echo among intellectuals in the cities and the 'poorest of the poor' in the rural areas.

In Punjab and the North-east

The need to use statecraft to deal with quite a few other internal security problems — some of which have lain dormant for years — is also becoming more manifest by the day. In this category may be included the resurgence of militancy by pro-Khalistan groups in the Punjab, which could spill over into Haryana and Himachal Pradesh. The recent discovery of 'sleeper cells' in the Punjab clearly indicates the potential for the revival of a pro-Khalistan movement — which once ravaged large parts of the Punjab. While pro-Khalistani sentiment is present in pockets in the United Kingdom and in Europe, it has not been in evidence in India for some time. Hence, the recent attack by pro-Khalistan elements on the headquarters of the Punjab Police Intelligence wing in Mohali was a rude shock to the security establishment. The incident appeared to be like a warning shot 'across the bow' by the Babbar Khalsa International, which has the backing of Pakistan's Inter-Services Intelligence — a reminder that militancy in the Punjab has not been permanently extinguished, and will need deft statecraft to nip it in the bud.

In India's North-east, more specifically in the States of Assam and Nagaland, there are again incipient signs of trouble which, for the present, may need use of statecraft rather than the security forces. In Assam, the United Liberation Front of Asom–Independent (ULFA-I) is trying to revive its activities after a long spell of hibernation. Currently, the ULFA-I operates from Myanmar, and its fortunes have been on a steady decline in the past decade. However, latest reports indicate that ULFA-I has embarked on a recruitment drive which will need to be curbed before matters get out of hand. Likewise in Nagaland, where the National Socialist Council of Nagalim (I-M) has recently initiated a fresh push for a solution of the 'Naga political issue', the situation is pregnant with serious possibilities. Both instances merit the use of statecraft so that the situation does not get out of hand.

A threat in the South

In the South, intelligence and police officials appear concerned about a likely revival of Liberation Tigers of Tamil Eelam (LTTE)-sponsored activities in Tamil Nadu. This stems from a possible revival of LTTE-sponsored militancy in Sri Lanka following the recent economic crises and uncertainty there. Security agencies in India believe that an attempt could be made to reach out to elements in Tamil Nadu to revive the spirit of the 1980s. This situation again needs deft statecraft to prevent a resurgence of the past.

Hence, it should be evident that statecraft is critical in finding lasting solutions to a host of problems that continue to afflict India. India faces several challenges today, but the answer to this is neither grand strategy nor grand simplifications nor resort to higher doses of security. India must navigate its way through a complex set of circumstances and situations, and suitably manage crises which might otherwise undermine peace and stability. A properly structured set of policies,

having liberal doses of statecraft in addition to a proper set of security measures, is the best answer to India's needs, now and in the future.

GRIM TURN

Nine civilians have been killed in targeted killings by militants in the past 22 days in Kashmir, including a Kashmiri Pandit employee, a Hindu schoolteacher from Jammu and a bank manager from Rajasthan. This has triggered a wave of protests in the Valley from the minority communities. Protesting since May 12 when Rahul Bhat, a Pandit employee, was killed in his office, over 4,000 Pandit employees recruited under a special package are on the verge of another migration as in the 1990s. Their leaders say they are contemplating mass exodus and resignations unless relocated outside the Valley. The abominable terrorist violence and the predicament of the Pandits and Hindus denote a grim reversal of all the gains towards peace and reconciliation in the last decade or so. The Valley had welcomed a subtle and slow return of Kashmiri Pandits, a segment of those who left in the face of a surge in violence and targeted killings in the 1990s. Their return was encouraged by the comprehensive policy of then Prime Minister Manmohan Singh, who in 2008 worked on a strategy: a political outreach to stakeholders of Kashmir's political spectrum for creating a conducive atmosphere and, at the same time, extending permanent financial support to Pandits willing to return.

The Prime Minister's Package for Return and Rehabilitation of Kashmir migrants not only offered jobs to Pandit youths but also doled out an initial financial assistance of ₹7.5 lakh per family, which was later increased to ₹20-₹25 lakh — in three instalments for those who settled in the Valley. It is not a mere coincidence that a turn for the worse coincided with the Centre's new push to alter Kashmir's relations with India, starting with the termination of Jammu and Kashmir's statehood and special constitutional status in 2019. On December 31, 2020, a Hindu goldsmith was killed; a series of targeted killings of members of the minorities, including Kashmiri Pandits, started from October 6, 2021 when Makhan Lal Bindroo who ran the famous Bindroo Medicate was killed in his shop in Srinagar. Guest workers in the Valley from other parts of the country have also been felled. Policies implemented by the Centre regarding land and government jobs are perceived in Jammu and Kashmir as disadvantageous to locals, increasing the sense of alienation that is being exploited by separatists and Pakistan-backed terrorists. The Centre must take measures to ensure the security of Hindus, and migrant workers in the Valley, at any cost as an immediate response. It must also think afresh its Kashmir policy and create space for political dialogue. It seems the dilution of Article 370 was not the end of the problem but the beginning of fresh challenges in Kashmir, which need careful handling rather than just muscular triumphalism.

ABSOLUTION

Shoddy investigation is one thing, but a malicious and motivated probe is quite another. The probe conducted by former Narcotics Control Bureau (NCB) official Sameer Wankhede into a purported tip-off about consumption of drugs on board a cruise ship, in October 2021, seems to fall in the latter category. The raid on the vessel resulted in seizure of narcotic substances and the arrest of several people, including Aryan Khan, son of Bollywood star Shah Rukh Khan. Even though nothing was seized from Mr. Khan, the agency made sensational claims in court about his being part of an international drug trafficking network and, quite strangely, cited messages purportedly exchanged on WhatsApp as 'evidence'. By the time he obtained bail weeks later, the case had all the makings of a witch-hunt. A special investigation team from Delhi, which took over the case after allegations of extortion surfaced against Mr. Wankhede, has now cited lapses in the initial

investigation and the lack of prosecutable evidence, and absolved Mr. Khan and five others and excluded them from the charge sheet filed recently. The lapses include failure to video-graph the search of the ship, not conducting a medical examination to prove consumption, and examining Mr. Khan's phone and reading messages on it without any legal basis.

It is good that the agency made amends for the mischief done by the initial set of investigators by applying the standard of 'proof beyond reasonable doubt' while presenting its final report. At the same time, the NCB has to re-examine its priorities. It is an elite agency in the fight against international trafficking in narcotic and psychotropic substances. Its primary focus ought to be on trans-national smuggling networks, while the job of pursuing drug peddlers and raiding rave parties must be left to the local police. While strict disciplinary action is warranted if any officer is found involved in 'fixing' someone, it is also time that the Government came out with a legal framework for compensating those jailed without proof. The country does not have a law on the grant of compensation to those maliciously prosecuted. However, constitutional courts do exercise their vast powers sometimes to award monetary recompense; the remedy of a civil suit is also available in law, but it is time-consuming. The Law Commission of India has recommended enactment of a law to make compensation in such cases an enforceable right. Currently, Section 358 of the Cr.P.C. provides for a paltry fine to be imposed on a person on whose complaint a person is arrested without sufficient grounds. Such provisions should be expanded to cover just compensation by the state for unnecessary arrests. It is a sobering thought to note that even people with celebrity status and vast resources are not insulated from the misuse of police powers, even while recognising that it is still possible to vindicate one's innocence and force the establishment to adopt a course correction.

NOT EVERYTHING MUSLIM IS MUGHAL

The last few weeks have been all about dressing the past anew. The Bharatiya Janata Party, out of office in the capital since December 1998, has taken to time-tested ways of catching the public eye.

Taking a cue from the Uttar Pradesh government's penchant to rename townships after Hindutva mascots, the party wants 40 villages of 'Mughal' Delhi to be renamed. There is a catch: some of the 'Mughal' villages are not Mughal at all! They pre-date the arrival of the Mughals in 1526 with many villages' origin going back to the 13th and 14th centuries.

As for Delhi, all cities except Shahjahanabad, founded by the Mughal emperor Shah Jahan in the 17th century, were established by non-Mughals. Siri, Tughlaqabad, Jahanpanah, Firozabad and Dinpanah were all founded before Shahjahanabad, and indeed, Lutyens' Delhi. Sultans like Alauddin Khilji, Ghiyasuddin Tughlaq and Feroz Shah Tughlaq were responsible for building these cities virtually from scratch. And most of the 40 villages shortlisted for rechristening fall in these erstwhile cities of Delhi.

Asking Chief Minister Arvind Kejriwal to issue orders for renaming the villages, Delhi BJP chief Adesh Gupta said, "Delhi is no longer Mughalon ki sarai (resting place) but the capital of the country. The youth of these villages no longer want to carry on with symbols of slavery. They want their villages to be known after the great sons of the country and eminent personalities..."

Among the "symbols of slavery" Gupta wants renamed are such upmarket places as Saidul Ajaib, Yusuf Sarai, Hauz Khas, Sheikh Sarai, Mohammadpur and Masjid Moth, besides Hasanpur, Nangloi, Neb Sarai, Rasulpur, Nasirpur and so on. Gupta also proposed the names of 27 police officers besides eminent singers, sportspersons, defence personnel and freedom fighters for these urban

villages, giving the names of constable Ratan Lal, IB officer Ankit Sharma, inspector Mohan Chand Sharma besides former Prime Minister Atal Bihari Vajpayee, Captain Vikram Batra, Ustad Bismillah Khan, Lata Mangeshkar and Milkha Singh, etc.

The list might seem researched and reasonable, but a little peek at the history around the naming of these villages would be useful. For instance, Zamrudpur in South Delhi is named after Zamrud Khan, an Afghan noble at the court of Sikander Lodi, father of Ibrahim Lodi, who fought Babur in the Battle of Panipat in 1526.

Ring of irony

Khan was given this little fief or jagir by Sikander in recognition of his loyalty. Zamrudpur today has five mausoleums where Khan's family and kin rest in peace. The demand for renaming Zamrudpur has a ring of irony to it. On the one hand, we have had persistent references to contemporary Muslims being called 'Babur ki aulad' (progeny of Babur), and on the other, the last vestiges of the predecessors of Babur's opponents are sought to be obliterated.

Similarly, take the Begumpur Masjid in the village named after it. The mosque was built by Khan-i-Jahan Junan Shah, Prime Minister during the reign of Feroz Shah Tughlaq, who was known to favour mosques, madrasas and sarais for the wayfarer. The masjid has been in a state of disrepair for years, but rather than address the neglect of the heritage monument, the cry is to rename the village itself.

As for Delhi being a "Mughalon ki sarai", nothing could be further from the truth. Delhi indeed had scores of sarais, but they were built not by the Mughals (1526-1857) but by Feroz Shah Tughlaq in the 14th century. Not everything Muslim in India is Mughal! Noted historian K.A. Nizami writing in Delhi: In Historical Perspectives (translated by Ather Farouqui), expressed, "In Delhi and Ferozabad, 120 khaneqahs built by Feroz Shah were in fact serais. In the words of Afif, the serais were built to accommodate travellers. They provided all amenities but were affordable for people with low income as well."

Likewise, Saidul Ajaib is named after Sayyid-ul Hujjab Maruf, a Sufi noble from Feroz Shah Tughlaq's reign. Maruf and his father, Khwaja Wahid Qureshi, were disciples of Nizamuddin Auliya, the famous Sufi saint revered to this day. The fiefdom of Maruf, Saidul Ajaib, is home to the Garden of Five Senses and often hosts cultural evenings. It is this little slice of rich history that the BJP wants erased from the socio-cultural map of the city.

Both Yusuf Sarai and Hauz Khas hail from early medieval India, a time when the Mongol raids were being foiled by Alauddin Khilji, the ablest Khilji ruler who introduced some of the earliest administrative and economic reforms. The survival of Yusuf Sarai and Hauz Khas, as also that of Siri (the capital founded by Khilji), is a symbol not of "slavery", but pride in the nation for successfully resisting the Mongol onslaught.

The demand to rename these villages stems not from any perceived sense of hurt but a relentless bid to sow fresh seeds of social division by disowning India's centuries-old medieval past. What bulldozers were to Jahangirpuri (New Delhi) and Khargone (Madhya Pradesh), this demand is to the history of Delhi. It seeks to equate everything Muslim with the Mughals, and in turn tries to portray Mughals as barbaric marauders, the aim being to hold Muslims responsible for any trespasses of history. Incidentally, the Mughals, from Humayun onwards, were all born in what the RSS calls Akhand Bharat.

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Sweet will of the majority

The latest demand is nothing but an attempt to fulfil the dream of Hindutva ideologues V.D. Savarkar and M.S. Golwalkar; the former having coined the terms pitrabhu and punyabhu. In other words, India belongs to those whose fatherland and sacred land fall within its geographical confines. Others may live here on the sweet will of the majority community with no rights or privileges.

Golwalkar stood for the exclusion of non-Hindus from all walks of public life. As recalled by author Jyotirmaya Sharma in M.S. Golwalkar, the RSS and India, "At the Sindi Chintan Baithak of 1954, Golwalkar refers to an incident in Nagpur, where he went to attend a meeting called to discuss the question of relations between Brahmins and non-Brahmins. He was surprised to see a Muslim addressing the meeting. The organisers told him... that the Muslims too were non-Brahmins. Golwalkar reacted by saying that if there were differences between Brahmins and non-Brahmins, it was still a question that concerned Hindu society... Do what you must, but keep the Muslims out, was his message."

Gupta's attempt to rewrite history at the grassroots level is much more sinister than the action of merely renaming a railway station (Mughalsarai Junction/ Pt. Deen Dayal Upadhyaya Junction) or a sacred confluence of rivers (Allahabad/ Prayagraj).

The demand to rename 40 villages is part of an emerging Hindu Rashtra as envisioned by the RSS where everything non-Hindu is foreign, and thus to be forever stamped out of existence.

ENFORCED DIRECTORATE

Days after the Enforcement Directorate arrested Delhi minister and Aam Aadmi Party leader Satyendar Jain in a money laundering case, it sent a summons to Sonia and Rahul Gandhi in connection with the National Herald case in which they are charged with misappropriating funds. The AAP and Congress have protested loudly but the predictable political noise must not distract from the imperative for AAP and Congress leaders to submit to due process — and for the law to take its course. All governments have wielded Central agencies like the ED, Central Bureau of Investigation (CBI) and National Investigation Agency (NIA) for political purposes – remember, the CBI was called the "Congress Bureau of Investigation" under the UPA. References to agencies have invoked parallels with a parrot in a cage. And yet, the ED and the NDA government must also know this: Allegations of misuse of the central agency by today's ruling establishment to settle scores with political opponents are becoming disquietingly frequent and familiar.

An overwhelming majority of the politicians under probe by the CBI, ED and NIA belong to the ranks of the Opposition, only rarely to the ruling party or its allies. In fact, there is hardly any Opposition party of significance today that does not have members under the scanner of these agencies, with the ED clearly being the most pro-active, or overzealous, of the three. That it has an abysmal record of convictions is also telling. In far too many cases, central agencies have moved against these leaders just ahead of elections, raising questions of not just political motivation but also political timing — the AAP has alleged that action against Minister Jain is a political move ahead of the assembly polls in Himachal Pradesh and similar questions over the remarkable coincidence of ED action and an electoral face-off have been raised earlier by parties and leaders ahead of other elections. There are instances, too, of leaders being probed by the central agencies while in the Opposition, subsequently crossing the aisle to join the BJP and finding themselves magically cleansed of the taint.

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR

Telegram: http://t.me/DreamIAS_Jamshedpur

On paper and in principle, these agencies are supposed to work independently of the government, insulated from all political agendas and motives. The reality, however, is messier, and the NDA presides over a disturbing number of deviations from the norm. It needs to pay attention to, and address perceptions that it is enabling and choreographing political witch hunts. The trust in premier investigating institutions, their credibility, is at stake.

WOMEN AT THE TOP

Taking another step towards equity, three women, Shruti Sharma, Ankita Agarwal and Gamini Singla, secured the first, second and third ranks, respectively, in the 2021 Civil Services examinations conducted by the Union Public Service Commission (UPSC). Considered one of the toughest examinations to crack, the girls emerged successfully at the top in their second attempt, and in the case of the second-ranker, in her third try. All three women agreed that it was a long, difficult and challenging journey. With 10 of the top 25 rank-holders being women, there is a lot to celebrate — and ponder over. According to the latest All India Survey on Higher Education report, published by the Ministry of Education for 2019-2020, the gross enrolment ratio in higher education for the female population is 27.3%, compared to 26.9% for males. In this backdrop, women comprised only 26% — or 177 — of the total of 685 candidates recommended by the UPSC for appointment to the Indian Administrative Service (IAS), Indian Foreign Service (IFS), Indian Police Service (IPS) and Central Services, Group A and B. This skewed statistic must change because public service offers a unique opportunity to bring about social change, and women can drive this, especially in a country where girls often have to drop out of school for a variety of reasons, from poverty, early marriage to lack of toilets.

Ms. Sharma hails from Bijnor (Uttar Pradesh), Ms. Agarwal from Kolkata and Ms. Singla from Sunam (Punjab), and each of their stories is that of struggle and persistence. It has been a hard-fought battle for women to come this far in the IAS, and sometimes a trickier road awaits them once inside the steel framework of the administrative setup. If three women are at the top today, they have a lot to thank trailblazers such as Anna Rajam Malhotra (née George), the first woman to join the Indian Administrative Service in 1951, or C.B. Muthamma, the first woman to join the IFS in 1948 who fought a landmark case in the Supreme Court of India when she was looked over for a promotion for Ambassador, or even Anita Kaul who worked tirelessly to champion the Right to Education Act 2009 which made education a fundamental right for every child. The early part of a civil servant's career is usually spent in rural or semi-urban India, giving her a vantage point over issues including women's health, literacy, economic independence, caste and gender disparities that are in need of reforms or policy intervention but are often overlooked due to lack of a proper understanding. To achieve this, education is the key. Also, if civil service has to represent all sections of the population, of which half are women, their representation in the services too must increase at all levels of the bureaucracy, starting with the highest rung.

QUESTIONING THE SAFETY OF AADHAAR

The story so far: Two days after issuing an advisory asking people to refrain from sharing photocopies of their Aadhaar Card, the Unique Identification Development Authority of India (UIDAI) opted to withdraw the notification. It stated that the action was to avert any possibility of 'misinterpretation' of the (withdrawn) press release, asking people to exercise "normal prudence" in using/sharing their Aadhaar numbers.

What did the UIDAI advisory say?

The withdrawn notice had suggested holders use a masked Aadhaar card instead of the conventional photocopy, adding that the document must not be downloaded from a cybercafé or public computer and if done for some reason, must be permanently deleted from the system. 'Masked Aadhaar' veils the first eight digits of the twelve-digit ID with 'XXXX' characters. The notice informed that only entities possessing a 'User Licence' are permitted to seek Aadhaar for authentication purposes. Private entities like hotels or film halls cannot collect or keep copies of the identification document.

In July 2018, Telecom Regulatory of India's Chairman R.S. Sharma tweeted his Aadhaar number challenging users to "cause him any harm". In response, users dug up his mobile number, PAN number, photographs, residential address and date of birth. It could not be ascertained if the PAN number was actually correct. UIDAI dismissed assertions of any data leak, arguing that most of the data was publicly available. It did however caution users from publicly sharing their Aadhaar numbers.

What does the law say?

The Aadhaar (Targeted Delivery of Financial and Other Subsidies Benefits and Services) Act, 2016 makes it clear that Aadhaar authentication is necessary for availing subsidies, benefits and services that are financed from the Consolidated Fund of India. In the absence of Aadhaar, the individual is to be offered an alternate and viable means of identification to ensure she/he is not deprived of the same.

Separately, Aadhaar has been described as a preferred KYC (Know Your Customer) document but not mandatory for opening bank accounts, acquiring a new SIM or school admissions.

The requesting entity would have to obtain the consent of the individual before collecting his/her identity and ensure that the information is only used for authentication purposes on the Central Identities Data Repository (CIDR). This centralised database contains all Aadhaar numbers and holder's corresponding demographic and biometric information. UIDAI responds to authentication queries with a 'Yes' or 'No'. In some cases, basic KYC details (as name, address, photograph etc) accompany the verification answer 'Yes'. The regulator does not receive or collect the holder's bank, investment or insurance details. Additionally, the Aadhaar Act forbids sharing Core Biometric Information (such as finger print, iris scan, among other biometric attributes) for any purpose other than Aadhaar number generation and authentication.

The Act makes it clear that confidentiality needs to be maintained and the authenticated information cannot be used for anything other than the specified purpose. More importantly, no Aadhaar number (or enclosed personal information) collected from the holder can be published, displayed or posted publicly. Identity information or authentication records would only be liable to be produced pursuant to an order of the High Court or Supreme Court, or by someone of the Secretary rank or above in the interest of national security.

Is identity theft via Aadhaar possible?

As per the National Payment Corporation of India's (NCPI) data, ₹6.48 crore worth of financial frauds through 8,739 transactions involving 2,391 unique users took place in FY 2021-22.

Since the inception of the UID project, institutions and organisations have endowed greater focus on linking their databases with Aadhaar numbers, including for bank accounts especially in light

of the compulsory linkage for direct benefit transfer schemes. The NPCI's Aadhaar Payments Bridge (APB) and the Aadhaar Enabled Payment System (AEPS) facilitate direct benefit transfer (DBT) and allow individuals to use Aadhaar for payments. This requires bank accounts to be linked to Aadhaar. In 2017, researchers at the Centre for Internet and Society (CIS) acquired information of various beneficiaries of such social security and employment schemes such as their Aadhaar numbers, bank account details, job card status, mobile number etc. The same year, the UIDAI in response to an RTI stated that more than 200 central and State government websites publicly displayed details of some Aadhaar beneficiaries such as their names and addresses. Both were made possible by the lack of robust encryption. This data could be potentially used to fraudulently link the rightful beneficiary's Aadhaar with a distinct bank account, embezzling the beneficiary by impersonation, made possible by the sizeable identity documents available.

The UIDAI maintains that merely knowing the bank account number would not be enough to withdraw money from the bank, stating that the individual's fingerprint, iris data or OTP to a registered mobile number would be required. CIS states that brokers are known to buy tonnes of Aadhaar documents from mobile shops and other places where the identification document is shared. Additionally, there have been instances where employees of service providers were caught stealing biometric information collected solely for Aadhaar authentication. A far-stretch means for acquiring biometrics would involve collecting fingerprints from varied places that an individual might touch unknowingly in a certain space (such as a railing of a staircase) with iris data being acquired from high-resolution cameras.

As for mobile verification, phone users in India are known to carry two or more phone numbers at one time. There could be a possibility that the number linked to the Aadhaar is not prominently used. Fraudsters could use this as an opportunity to link their phone numbers instead, update it in the bank using the available information (of the individual) and deprive them of benefits or embezzle funds.

What are some of the structural problems that the UIDAI faces?

The Aadhaar Data Vault is where all numbers collected by authentication agencies are centrally stored. Its objective is to provide a dedicated facility for the agencies to access details only on a need-to-know basis. Comptroller and Auditor General of India's (CAG) latest report stipulated that UIDAI neither specified any encryption algorithm (as of October 2020) to secure the same nor a mechanism to illustrate that the entities were adhering to appropriate procedures. It relied solely on audit reports provided to them by the entities themselves. Further, UIDAI's unstable record with biometric authentication has not helped it with de-duplication efforts, the process that ensures that each Aadhaar Number generated is unique. The CAG's reported stated that apart from the issue of multiple Aadhaars to the same resident, there have been instances of the same biometric data being accorded to multiple residents. As per UIDAI's Tech Centre, nearly 4.75 lakh duplicate Aadhaar numbers were cancelled as of November 2019. The regulator relies on Automated Biometric Identification Systems for taking corrective actions. The CAG concluded it was "not effective enough" in detecting the leakages and plugging them. Biometric authentications can be a cause of worry, especially for disabled and senior citizens with both the iris and fingerprints dilapidating. Though the UIDAI has assured that no one would be deprived of any benefits due to biometric authentication failures, the absence of an efficient technology could serve as poignant premise for frauds to make use of their 'databases'.

EXPLAINED: ASTRA MK-1 AIR-TO-AIR MISSILE — FEATURES, STRATEGIC SIGNIFICANCE

The Ministry of Defence said on Tuesday (May 31) that it has signed a contract with the Hyderabad-based public-sector Bharat Dynamics Ltd (BDL) for supply of the Astra Mark-1, at a cost of Rs 2,971 crore, for deployment on fighter jets of the Indian Air Force and Indian Navy. The Astra Mk-1 is a beyond visual range (BVR), air-to-air missile (AAM).

Astra and its variants

The missile has been designed and developed by the Defence Research and Development Organisation (DRDO) for deployment on fighter jets like Sukhoi-30 MKI and Tejas of the IAF and the Mig-29K of the Navy.

BVM missiles are capable of engaging beyond the range of 20 nautical miles or 37 kilometers . AAMs are fired from an airborne asset to destroy an airborne target. DRDO officials told The Indian Express that the Astra project was officially launched in the early 2000s with defined parameters and proposed future variants. Around 2017, the development phase of Mk-1 version was complete.

Several successful tests have been conducted since 2017 from Sukhoi-30 MKIs. While the range for Astra Mk-1 is around 110 km, the Mk-2 with a range over 150 km is under development and Mk-3 version with a longer range is being envisaged. One more version of Astra, with a range smaller than Mk-1 is also under development.

The contract

The purchase will be under the Buy (Indian-IDDM) category of defence acquisition — procurement of products from an Indian vendor that have been "indigenously designed, developed and manufactured" with a minimum of 50 per cent indigenous content calculated on the basis of cost of the total contract value.

The Ministry has said that until now, the technology to manufacture missiles of this class indigenously was not available. The transfer of technology from DRDO to BDL for production of Astra Mk-1 missile and all associated systems has been completed and the production at BDL has already started. The Ministry said the project will create opportunities for several MSMEs in aerospace technology for at least 25 years. "The project essentially embodies the spirit of 'Atmanirbhar Bharat' and will help facilitate realising our country's journey towards self-reliance in Air to Air Missiles." the MoD said.

More than 50 private and public industries, including the IAF and Hindustan Aeronautics Limited (HAL), have contributed in building the Astra systems.

Strategic significance

The missile has been designed based on requirements specified by the IAF for BVR as well as close-combat engagement, reducing the dependency on foreign sources. AAMs with BVR capability provides large stand-off ranges to own fighter aircraft which can neutralise adversary airborne assets without exposing themselves to adversary air defence measures. Stand-off range means the missile is launched at a distance sufficient to allow the attacking side to evade defensive fire from the target.

The MoD has said that Astra is technologically and economically superior to many such imported missile systems. The missile can travel at speeds more than four times that of sound and can reach a maximum altitude of 20 km, making it extremely flexible for air combat.

The missile is fully integrated on the Sukhoi 30 MKI I and will be integrated with other fighter aircraft in a phased manner, including the Light Combat Aircraft (LCA) Tejas. The Indian Navy will integrate the missile on the MiG-29K fighter aircraft which are deployed on the Navy's aircraft carriers, thus adding to the lethality of India's Aircraft carriers.

MONSOON SETS IN OVER KERALA

The monsoon has reached Kerala, the India Meteorological Department (IMD) said on Sunday. While this is three days before the usual onset date of June 1, it is two days later than what the IMD forecast on May 13.

Rainfall is not the only criterion that the IMD relies on to declare the monsoon's onset. Windspeeds of a minimum strength and depth in the atmosphere, the outgoing longwave radiation, which is a measure of cloudiness, and rainfall appearing to be consistent and well distributed over Kerala, are important criteria.

Until Saturday, most of these parameters — except sufficient rainfall over Kerala — were fulfilled.

"There has been widespread rainfall activity over Kerala during the past 24 hours and out of the 14 rainfall monitoring stations for declaring onset of the monsoon over Kerala, 10 have received rainfall of 2.5 mm or more. Thus, all the conditions for onset of monsoon over Kerala have been satisfied today, the 29th May 2022," said a statement from the IMD.

In the days ahead, the southwest monsoon is expected to advance to "...remaining parts of Kerala, some more parts of Tamil Nadu, some parts of Karnataka, and some more parts of south and Central Bay of Bengal, some parts of northeast Bay of Bengal and northeastern States during next 3-4 days," it added.

Rainfall delayed

Last year too, the monsoon had been forecast to arrive by May 31 but officially landed on June 3 after which the progress was slow.

The IMD used a specialised weather model to forecast the monsoon onset over Kerala and the forecast date had a built-in four-day margin of error.

Except for 2015, the monsoon had arrived within the four-day window of the date forecast by the IMD from 2005 to 2021, the department said.

The IMD has forecast the June-September monsoon to be normal with rainfall likely to be 99% of the historical normal.

CENTRE HANDS OVER 10 STOLEN IDOLS TO T.N. GOVT.

Ten idols dating back to the 10th Century CE that were stolen from Tamil Nadu temples, starting from the 1960s till 2008, were on Wednesday handed over by the Centre to the State government at a ceremony in New Delhi.

The Union Culture Ministry, which along with the Ministry of External Affairs had retrieved the idols from the United States and Australia in 2020, 2021 and 2022, handed over the antiquities to Tamil Nadu Director-General of Police C. Sylendra Babu. The returned antiquities included two stone sculptures of Dwarapalas dating back to the 15th-16th Century CE that were stolen from a temple in Tirunelveli district in 1994, according to the Culture Ministry. Both the sculptures were retrieved from Australia in 2020. Two metal idols of Kanakalamurti and Nandikeshava stolen from Narasinganadhar Swamy temple in Tirunelveli district in 1985 were retrieved from the U.S.

A bronze sculpture of Nataraja dating back to 11th-12th Century CE that was stolen from the strong room of Punnainallur Arulmigu Mariyamman Temple of Thanjavur district between 1966-77 was found in the Asia Society Museum located in New York, as also the bronze idols of Siva and Parvati belonging to Vanmiganadhar Swamy Temple in Thanjavur district from a museum from Indiana.

The Idol wing, through the Archaeological Survey of India (ASI), successfully retrieved the idols of four-armed Vishnu and Sri Devi, which were stolen from the Varadharaja Perumal Temple of Suthamally village in Ariyalur district. Both these idols were also kept in a museum in New York.

The two metal idols of saint Sambandar in child form, of which one idol was stolen from Nagapattinam district, and the other for which the source is yet to be identified, were returned by the Australian government. In total, eight bronze and two stone sculptures were returned. Six of the idols were retrieved from the U.S. and four from Australia.

Union Culture Minister G. Kishan Reddy said the Narendra Modi government had brought back 238 stolen antiquities in its eight years in office, as opposed to 13 in the period from Independence till 2013. He said Mr. Modi's personal relationships and warm ties with world leaders had helped. "All the credit goes to our Prime Minister," Mr. Reddy said.

BIHAR TO AUTHORISE EXPLORATION OF COUNTRY'S 'LARGEST' GOLD RESERVE

The Bihar government has decided to accord permission for exploration of the "country's largest" gold reserve in Jamui district, a senior official said on Saturday.

As per a Geological Survey of India (GSI) survey, around 222.88 million tonnes of gold reserve, including 37.6 tonnes of the mineral-rich ore, are present in the district.

"The State Mines and Geology Department is in consultation with agencies engaged in exploration, including GSI and the National Mineral Development Corporation, for exploration of gold reserves in Jamui," Additional Chief Secretary-cum-Mines Commissioner Harjot Kaur Bamhrah said.

"The consultation started after analysing the GSI findings that indicated the presence of gold in areas such as Karmatia, Jhajha and Sono in Jamui district."

She said the government is likely to sign an MoU with a central agency or agencies for G3 (preliminary) stage exploration within a month. In certain areas, G2 (general) exploration could also be done, Ms. Bamhrah said.

Union Minister of Mines Pralhad Joshi had last year informed the Lok Sabha that Bihar holds the highest share of India's gold reserves.

In a written reply, he had said that Bihar has 222.885 million tonnes of gold metal, which amounts to 44% of the total gold reserves in the country.

SINGING WITH KK

As a performer, KK transformed his early disdain for "boundaries" into the chameleon-like ability to assume different personas and tap into the emotional core of any song.

KK, born Krishnakumar Kunnath, came to prominence at a time when the Indipop wave which, in the '90s, had changed how music was made and performed in India, had begun to recede.

In an interview, well after he had made a name in playback singing, KK would recall being sent to music classes as a child and hating them. It seemed to him that, with their emphasis on the dos and don'ts, they imposed "boundaries" on music. The singer, who died at 53 after a concert in Kolkata on Tuesday, had grown up with music of all kinds playing in his home in Delhi. He had developed an ear and, after his decision to forgo formal training, it was that nurtured ability, as well as his innate talent, that helped him gain a foothold in the recording studios of multiple film industries.

KK, born Krishnakumar Kunnath, came to prominence at a time when the Indipop wave which, in the '90s, had changed how music was made and performed in India, had begun to recede. Two tracks from his 1999 debut album, "Yaaron" and "Pal", became hits, in large part because they articulated a sense of loss and longing that had instant resonance with a generation of listeners on the threshold of adulthood. His big Bollywood breakthrough, the song "Tadap Tadap" from Hum Dil De Chuke Sanam, had a similar effect, becoming part of the soundtrack of many a real-life story of unrequited love and heartbreak. That these songs risked becoming cliches is, in fact, a testament to their appeal.

As a performer, KK transformed his early disdain for "boundaries" into the chameleon-like ability to assume different personas and tap into the emotional core of any song. In doing so, he helped a society, arguably lacking in articulateness in matters of the heart, find words and melodies with which to do so. His songs became an important part of the emotional trajectory of a generation of music lovers who, he once admitted, did not always recognise him when he performed in concerts. But they always, without missing a beat, sang along to his song.

OF LUNGS, TREES AND SIN STOCKS

The second Global Adult Tobacco Survey estimated that 28.6% of all adults in India used tobacco in 2016-2017, second only to China. The survey said 42.4% of men and 14.2% of women used tobacco — both the smokeless form, i.e. chewing tobacco, and smoked form, i.e. cigarettes and 'bidis'.

In 1987, the World Health Organization (WHO) marked 'World No Tobacco Day' to bring attention to the ill-effects of tobacco. 'Poisoning our planet' is the theme for May 31 this year, in an effort to highlight the ill-effects of tobacco on the environment.

Harm to health and environment

In 2021, smoking killed about 8 million people. But tobacco is not just a bane on human health. According to the WHO, 600 million trees are chopped down annually to make cigarettes, 84 million tonnes of CO_2 emissions are released into the atmosphere, and 22 billion litres of water are used to make cigarettes. In addition to the environmental costs of production, cigarette butts, packaging, plastic pouches of smokeless tobacco, and electronics and batteries associated with e-cigarettes pollute our environment.

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India, the world's second largest producer of tobacco, produces about 800 million kg annually. Most efforts to counter the tobacco epidemic have been directed at creating awareness about the ill-effects of tobacco. These have borne fruit. Over 90% of adults in India, across strata, identify tobacco as being harmful. Additional gains in overcoming the ill-effects of tobacco are therefore unlikely to come from more awareness campaigns alone. While several campaigns have also dealt with finding alternative livelihoods for tobacco farmers, an issue that sometimes goes unnoticed is deforestation.

About 6 million farmers and 20 million farm labourers work in tobacco farming across 15 States (Central Tobacco Research Institute). Although farming of tobacco only contributes to 1% of GDP as per one study, the direct health expenditure on treating tobacco-related diseases alone accounts for 5.3% of total health spending in India in a year (WHO). Despite this, farming of tobacco cannot be stopped without serious economic consequences and/or social disruption.

Thankfully, there are market-based solutions. The forestry community has devised solutions and instruments to incentivise the reduction of deforestation through the use of carbon credits. With the surge in new commitments to zero carbon from the international commodity sector, companies are putting pressure on their supply chains to transition to sustainable practices and reduce deforestation. Companies like Unilever, Amazon, Nestlé, Alibaba, and Mahindra Group are pledging to cut emissions and are poised to invest an estimated $50 billion in nature-based solutions such as carbon sinks. This is driving new interest in sourcing from sustainable landscapes and buying high-quality forest carbon credits. The revenue from this is many times higher than the earnings from selling tobacco leaves.

Cigarette companies themselves appear to be changing. In 2016, one of the largest cigarette companies pledged to begin transitioning its customers away from tobacco to smoke-free products. By 2019, it reported it was spending 98% of its research and development budget to back up this goal. Though first met with scepticism, this strategy of transitioning to 'socially responsible bottom-lines' is picking up speed. The rise of environmental, social, and governance (ESG) managers has helped. By looking at exposure to child labour, wasted energy and water, and diversity in management ranks, ESG managers say they have a clearer sense of a company's long-term survival options.

Better than before

Some companies have shown much greater levels of disclosure than their competitors. These statistics don't necessarily show how good the companies themselves are, but rather how much less harmful they are than they used to be. In a way, these so-called front runners are helping sin stocks get recognition for doing less harm than before by quantifying the pace of change. By transitioning to safer nicotine delivery systems, and moving away from tobacco, cigarette companies are potentially lowering the risk of their customers dying from cancer.

So, all is not grim. While there are problems in the business of tobacco and cigarettes, there are options, solutions and global movements being undertaken by the largest corporate enterprises. Educating potential consumers to not consume tobacco, supporting consumers in their journey to quit, and incentivising industry to help consumers and the planet will protect not just our lungs, but also the air we breathe.

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LIQUID MIRROR TELESCOPE IN DEVASTHAL SEES FIRST LIGHT

The four-metre International Liquid Mirror Telescope (ILMT) saw the first light recently, gazing out from its vantage on Devasthal, a hill in Uttarakhand, into the deep sky.

The telescope, staring at the sky overhead, will make sky surveys possible and obtain images that can help observe transient phenomena such as supernovae and record the presence of space debris or meteorites — basically, watch the skies.

The telescope has been built by a collaboration of scientists from Canada, Belgium and India. It is located at an altitude of 2,450 metres on the Devasthal Observatory campus of the Aryabhata Research Institute of Observational Sciences (ARIES) in Nainital district, an autonomous institute under the Department of Science and Technology, Government of India.

A large pool of mercury placed in a vessel is spun around so fast that it curves into a parabolic shape. Since mercury is reflective, this shape helps in focusing the reflected light. A thin sheet of mylar protects the mercury from the wind.

"It was thrilling to see the formation of the primary mirror. Nearly 50 litres of mercury, weighing close to 700 kilograms, is spun hard to form a paraboloid mirror of just 4 mm thickness and a diameter of about 4 metres," says Kuntal Misra, Project Investigator at ARIES. She has worked in this project since January 2020.

First image

The first image made by the telescope consisted of several stars and a galaxy, NGC 4274, which is 45 million light years away.

The telescope, having a primary mirror that is liquid, cannot be turned and pointed in any direction. It "stares" at the zenith and watches the sky as the earth rotates, thereby giving a view of different objects.

This property can be used to scan and survey the sky, observe transients and moving objects such as meteorites.

It will work in tandem with the existing 3.6-metre Devasthal Optical Telescope.

Once it starts making observations, the telescope will collect gigabytes of data, which will need to be analysed using artificial intelligence and machine learning (AI and ML) tools.

"In a night's observation, it will make thousands of images which cannot be analysed by just looking at them. We will need to develop and train AI and ML tools to do this," says Dipankar Banerjee, Director of the ARIES Observatory.

5G: UNDER THE HOOD

Lately there has been a lot of buzz around 5G. Last week Prime Minister Narendra Modi inaugurated the country's first indigenous test bed to help support the ecosystem around 5G. Earlier this year, the Government reiterated its plans to conduct auctions for 5G spectrum in June and expected services to be rolled out by the third quarter of the year.

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Service providers have been conducting 5G trials and 5G ready phones have been flooding the market. But what exactly is 5G? What lies behind the promise of faster downloads and better call quality?

Radio electronics refers to a broad range of technologies that can transmit, receive and process wireless signals. While these technologies can utilise electromagnetic spectrum that goes all the way up to 300GHz, the lower frequencies of this spectrum are particularly attractive. Lower frequency signals can travel longer distances and penetrate obstacles with lesser attenuation. Electronic components (amplifiers, transmitters, receivers) operating at lower frequencies are also easier to design and manufacture. Consequently, much of the bandwidth in the lower frequencies of this spectrum has already been allocated for several applications (mobile communications currently use the spectrum from 800MHz to 2.5 GHz).

New spectrum for 3GHz

With the increasing demand for mobile services, the currently allocated spectrum is proving inadequate. At the simplest level, 5G represents the allocation of new spectrum to increase capacity. Since most of the spectrum at lower frequencies is already being utilised — much of this new spectrum is being allocated at higher frequencies. The first deployments in India will be around 3GHz, but will expand to 25 GHz and beyond.

As 5G services evolve to occupy higher frequencies, it will significantly increase the bandwidth available for mobile services. However, at these frequencies the design of the transmitting and receiving equipment becomes more complex. Signal attenuation also increases. So, the coverage area of each cell tower will decrease which will require the towers to be more closely spaced.

An interesting fact related to the physics of signal transmission is that at higher frequencies it becomes easier to direct a signal in specific direction. So, signals transmitted from a cell tower can be more precisely directed at a specific user (rather than spreading out in various directions which is just a waste of energy).

Intuitively, this enhanced directivity results in less interference between signals meant for different users which directly translates to increased capacity. Thus, while operating at higher frequencies has some fundamental challenges, it offers some unique opportunities as well.

Evolving communication needs

Since much of the 5G infrastructure is being built from ground up, there is a chance to redesign the technology to make it more suitable for the evolving communication needs of the future. 5G places special emphasis on low latency, energy efficiency and standardisation.

Existing wireless communication infrastructure is primarily designed around the needs of mobile phones. However, several emerging applications in factory automation, gaming and remote healthcare have more stringent latency requirements. Self-driving cars is an illustrative example. Low delays between transmission and reception of messages are extremely critical when these cars have to co-operate with each other to avoid accidents.

As 5G rolls out, over the next several years the volume of data is expected to exponentially increase. To ensure that there isn't a corresponding increase in the energy usage, 5G places a lot of importance on energy efficiency. This will mean lower energy bills for service providers and longer battery life for mobile devices. Greater attention to standardisation is another important aspect of 5G. Today most of the components that make up wireless telecom interact with each

other using proprietary protocols that are vendor specific. To enable the rapid deployment of 5G infrastructure there is an industry-wide effort to standardise interaction between components. Greater standardisation would enable service providers to build their infrastructure, 'mixing and matching' components from multiple vendors. Switching vendors would also be easier which would foster competition and lower costs.

Advanced R&D

There is a lot of research in both industry and academia centred around 5G. An interesting topic is the convergence of positioning, sensing and communication. Traditionally, positioning, sensing and communication have been seen as separate technologies (for e.g., GPS is used for positioning, and radar for sensing). However, all three technologies involve transmission and reception of radio signals — hence it is possible for positioning and sensing to piggy back on 5G infrastructure that is primarily meant for communication. While this is not a new concept, 5G is expected to significantly improve the state of art. It turns out that some of the key features of 5G (such as increased bandwidth availability and antenna directionality) are also useful for improved accuracy of positioning and sensing. There is also a lot of research around cost and energy efficient electronic devices that can transmit and receive high frequency signals. This involves delving into the fundamental physics of semiconductor technologies and is expected to lay the foundation for the growth of wireless technology into higher frequency bands.

In fact, engineers are already busy prototyping a 6G system which would utilise the large amounts of available spectrum at frequencies above 100 GHz. As one of my colleagues who works in this domain pointed out — engineers are perhaps having more fun developing these technologies than consumers are using them!

SOCIAL MEDIA: APPEAL PANELS MAY BE SET UP FOR GRIEVANCES

The Ministry of Electronics and Information Technology (MeitY) has proposed the setting up of government-appointed appellate committees that will be empowered to review and possibly reverse content moderation decisions taken by social media companies like Facebook, Twitter and YouTube.

In a draft of proposed amendments to the Information Technology Rules 2021 (IT Rules), the MeitY said, "The Central Government shall constitute one or more Grievance Appellate Committees, which shall consist of a Chairperson and such other Members, as the Central Government may, by notification in the Official Gazette, appoint".

The proposal has triggered concerns about the government overriding social media companies' content decisions. Incidentally, the draft amendments were uploaded to the MeitY's website earlier Thursday morning, but were subsequently taken down by afternoon. Sources in the Ministry told The Indian Express that the draft would be re-uploaded sometime next week following an official announcement. Queries sent to the MeitY remained unanswered until publication.

Under the IT Rules, released in February last year, social media companies like Facebook and Twitter are mandated to appoint India-based resident grievance officers as part of their due diligence as 'intermediaries' who enjoy legal immunity from third-party content on their platform. These officers are responsible for overseeing the grievance redressal mechanism of complaints from the people who use their services. This means that if a user has an issue with an account or

a piece of content on a social media platform, they can complain about it to the company's grievance officer who will have to act and dispose of that complaint within 15 days.

What MeitY's draft essentially suggests is that in case a user is not satisfied with the content moderation decision taken by a company's grievance officer, they can appeal that decision before the proposed government-appointed appeals committee. "Every order passed by the Grievance Appellate Committee shall be complied with by the concerned intermediary," the ministry said in the draft.

Currently, the only remedial measure a user has if they feel a content decision by a company is unfair is to approach the courts. "The Grievance Appellate Committee is set up to provide an alternative to a user to file an appeal against the decision of the Grievance Officer rather than directly going to the court of law," the draft said. "However, the user has the right to seek judicial remedy at any time". The Ministry has not specified the composition of the committee and if it will consist of only people from the government or also include former judges and people from the industry. The committee will have 30 days to act on a user's appeal.

The proposal has invited criticism from civil society. In a statement, the Delhi-based digital rights group Internet Freedom Foundation said, "The proposal, without any legislative basis, seeks to subject content on social media to the direct scrutiny of the Government by permitting users to appeal decisions of social media platforms to a Grievance Appellate Committee constituted by MeitY". The draft also proposes to place additional responsibilities on grievance officers. It suggests that if a user complains about content which is "patently false", infringes copyright, and threatens the integrity of India, among other things, a grievance officer will have to expeditiously address it within 72 hours. Current rules require these officers to address all content-related complaints within 15 days.

The IT Rules, since implementation in May last year, have run into several legal troubles. Last year, WhatsApp filed a lawsuit against a particular provision in the rules which requires encrypted messaging platforms to trace the identity of the originator of a message. In its lawsuit, the company said that implementing the provision would dilute its encryption security and present a privacy-risk to users' personal conversations.

GECKO FOUND IN ANDHRA, ODISHA TURNS OUT TO BE A NEW SPECIES

A gecko found in Visakhapatnam in 2017, then thought to belong to a known species, has now been identified as a member of a new species. The species, Eublepharis pictus, also known as the Painted Leopard Gecko, has been described in the journal Evolutionary Systematics.

Researchers Zeeshan A Mirza (National Centre for Biological Sciences, Bengaluru) and C Gnaneswar of (Madras Crocodile Bank Trust) had initially identified the specimen, which they had found dead in a water tank, as an East Indian Leopard Gecko (Eublepharis hardwickii). Now, a phylogenetic study and morphological comparisons have distinguished it as a new species, which appears to be common in the forests of Andhra Pradesh and Odisha.

The gecko genus Eublepharis now has 7 species. Before Eublepharis pictus, Mirza had also previously described Eublepharis satpuraensis. "The new species differs from all members of the genus Eublepharis except for E hardwickii... Geographically the two species appear to be separated by the Brahmani River," Mirza and Gnaneswar wrote in their paper.

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E hardwickii has been recorded from several places in West Bengal, Jharkhand, Odisha and Andhra Pradesh. While noting that the new species is distributed across Odisha and Andhra Pradesh, the researchers wrote. "We here refrain from providing accurate locations of the species to ensure protection from illegal collection for the pet trade."

The species occurs outside protected areas. The authors pointed out that most leopard geckos are killed when encountered, and called for raising awareness about the fact that the species is actually harmless. "Based on IUCN (International Union for the Conservation of Nature) conservation prioritization criteria we propose to list E pictus... and E hardwickii as Near Threatened (NT) pending further information on local population estimates, especially in protected areas," the researchers wrote.

BUSINESS & ECONOMICS

U.S. BECOMES INDIA'S BIGGEST TRADING PARTNER AT $119 BILLION

The U.S. surpassed China to become India's top trading partner in 2021-22, reflecting strengthening economic ties between the two countries.

According to data with the Commerce Ministry, the bilateral trade between the U.S. and India stood at $119.42 billion in 2021-22 as against $80.51 billion in 2020-21. Exports to the U.S. increased to $76.11 billion in 2021-22 from $51.62 billion in the previous fiscal year, while imports rose to $43.31 billion from about $29 billion.

During 2021-22, India's two-way commerce with China aggregated at $115.42 billion as compared to $86.4 billion in 2020-21, the data showed. Exports to China marginally increased to $21.25 billion last fiscal year from $21.18 billion in 2020-21, while imports jumped to $94.16 billion from about $65.21 billion in 2020-21. Trade gap rose to $72.91 billion in 2021-22 from $44 billion in the previous fiscal year.

Trade experts believe that the trend of increasing bilateral trade with the U.S. will continue in the coming years also as New Delhi and Washington are engaged in strengthening economic ties. Federation of Indian Export Organisations vice-president Khalid Khan said India is emerging as a trusted trading partner and global firms are reducing their dependence on China for their supplies and are diversifying business into other countries like India.

"India has joined a U.S.-led initiative to set up an Indo-Pacific Economic Framework (IPEF) and this move would help boost economic ties further," Mr. Khan said.

Rakesh Mohan Joshi, Director of the Indian Institute of Plantation Management, Bangalore, too said that India is the fastest growing market economy with unparalleled demographic dividend and provides enormous opportunities for the U.S. and Indian firms for technology transfer, manufacturing, trade and investment.

A CRITICAL JUNCTURE

On Tuesday, the Centre said it has released States' outstanding GST compensation dues of almost ₹87,000 crore. The move marks a shift in stance as just a month earlier, the Finance Ministry had signalled that States' dues worth over ₹78,000 crore, pending for the last four months of 2021-22, will be released 'as and when' adequate GST compensation cess collections accrue. By May 31, the Centre said there was about ₹25,000 crore in the GST compensation fund and forked out the balance from its own coffers to be adjusted from future GST cess levies on sin goods, such as cars. The stated intent for this changed strategy makes eminent sense — to help States manage their resources and ensure spending, particularly of the capital variety to pump-prime the economy, happens smoothly through 2022-23. States have been anxious about revenue inflows once the five-year GST compensation window expires this month. The gesture to remit dues without waiting for cess accruals will also help cool the temperature of the Centre-States' fiscal parleys, that flared up afresh after some tangential remarks from the apex court on the nature of the GST Council's recommendations.

For consumers, this could mean a further extension in the levy of GST compensation cess beyond March 2026 — by when borrowings made over the past two years to bridge shortfalls in cess

collections, were to be repaid. The other important implication is that over April and May, the gap between revenues and the assured level promised to States under the GST compensation compact has narrowed to less than ₹5,000 crore a month, from over ₹19,600 crore averaged in the previous four months. The record GST collection of over ₹1.67 lakh crore in April helped, no doubt, and although May revenues have fallen 15.9% to ₹1.41 lakh crore, sustaining this two-month average could ease fiscal worries for both the Centre and the States. The Government, which had termed April revenues (for transactions in March) a reflection of a 'faster' recovery, suggested that the financial year end boosted those inflows, seeking to explain the dip in May. The elephant in the room remains ignored — high inflation, which the Government hinted could compel a pause in an impending rejig of the GST rate structure, has been a key factor for rising GST revenues (over ₹1.12 lakh crore for 11 months). Once that is acknowledged and the level of economic activity assessed minus inflation effects, the GST Council can take a more nuanced call on the next steps to reform the still-young tax system and sustain revenues. This must begin by assessing whether the GST rate restructuring should be deferred because of fears of higher inflation, or reoriented to lower inflation while broadening the tax net and easing compliance.

PRICE RISE AND GST

The story so far: The GST regime, about to complete five years this July, is due for an overhaul in tax rates levied on different products because of structural anomalies and to reduce the multiple tax slabs. A ministerial group of the GST Council, under Karnataka Chief Minister Basavaraj S. Bommai, was tasked last September to suggest immediate changes, as well as a roadmap for short- and medium-term changes to the GST rate structure. The group of ministers (GoM) is yet to conclude its deliberations.

What is the need to rationalise the GST rates?

From businesses' viewpoint, there are just too many tax rate slabs, compounded by aberrations in the duty structure through their supply chains with some inputs taxed more than the final product. There are five broad tax rates of zero, 5%, 12%, 18% and 28%, with a cess levied over and above the 28% on some 'sin' goods. Special lower rates are levied on items like precious stones and diamonds. Tax experts have been flagging that these are far too many rates and do not necessarily constitute a Good and Simple Tax.

For the government, the top priority, apart from simplifying the tax structure in the hope of bolstering compliance, is to rake in more revenues as they believe collections have been underwhelming. At the last full-fledged GST Council meet, Finance Minister Nirmala Sitharaman had stressed that the new indirect tax system was premised on a revenue-neutral tax rate of 15.5%, but actual revenues have been steadily going down taking the effective tax rate to 11.6%. "Knowingly or unknowingly, [the rate] was brought down by reduction in tax rates of some items," the Minister had said. Some of these frequent rate cuts were approved by the Council on the eve of critical elections.

The need to shore up revenues was also flagged as the assured compensation period for States under the GST compact expires on June 30, so their fiscal space will depend on actual collections thereafter. The Council set up two GoMs to resolve this – one to examine more technology and schemes to improve tax compliance, and another under Mr. Bommai to rationalise tax rates to correct anomalies and consider the merger of different tax slabs.

Haven't GST revenues been hitting new records?

Yes, they have – GST revenues have scaled fresh highs in three of the first four months of 2022, going past ₹1.67 lakh crore in April. The government terms this a sign of economic recovery and a reflection of the measures to tighten the screws on tax evaders, but there is another key factor — the runaway pace of price rise. Wholesale price inflation, which captures producers' costs, has been over 10% for over a year and peaked at 15.1% in April. Inflation faced by consumers on the ground has spiked to a near-eight year high of 7.8% in April. In a recent note, Ambit Capital analysts Sumit Shekhar and Eashaan Nair stressed that higher GST revenues "should not be confused" with a rise in consumption which is just 2% above pre-pandemic levels. The rise in prices, they said, was "the single most important factor for higher tax inflows" along with higher imports, compliance tweaks and a boom in the consumption of high-ticket items even as mass consumption goods and services languish.

Can we expect the rate reset this year?

Ambit reckoned that a hike in GST rates is 'almost certain' this year to ensure that high collections sustain and States get enough money from July onwards. But any rejig and merger of GST rates will entail some products being taxed higher, with concomitant ripple effects on prices. "The Centre and the States are not unmindful of the desperate need to rationalise the rate slabs and structure but we just need to get the timing right. When inflation is the top worry, whether the Council is ready to tackle this, is a key question," averred a top government official.

The Council is aware of the need to rationalise rates since at least 2019, but has deferred action each year due to macro-level compulsions — starting with slowing growth in 2019-20, followed by the pandemic's onset and the fledgling recovery in 2021-22. With inflation, much of it imported through pricier fuels, commodities and food items, expected to hover high through the year, the GST rate reset hopes appear bleak in 2022-23. Even if the conflict in Europe eases or ceases, its aftermath through sanctions as well as other supply chain disruptions could persist and keep prices high in 2023-24 as well. This may mean an even longer wait for a simpler GST regime, especially as tax hikes are unlikely to be a palatable option ahead of the 2024 general election.

EXPLAINED: READING GDP GROWTH DATA

India's gross domestic product (GDP) grew by 8.7% in 2021-22 (or FY22) according to the "provisional estimates" released by the Ministry of Statistics and Programme Implementation on Tuesday. This growth comes at the back of a 6.6% contraction in GDP during 2020-21 when the pandemic led to massive disruptions and widespread lockdowns. The GDP measures the value of all "final" goods and services— those that are bought by the final user— produced in a country in a given period (say a quarter or a year).

The data released also showed that the Gross Value Added (or GVA) — another measure of national income — grew by 8.1% in FY22. In FY21, GVA had contracted by 4.8%.

The key questions are: Has the recovery in FY22 been good enough to recover from the contraction of FY21? If so, have all sectors recovered? If the recovery isn't "broad-based", which sectors or sections remain behind where they were before Covid struck?

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How are GDP and GVA different?

While the GDP calculates national income by adding up all expenditures in the economy, the GVA calculates the national income from the supply side by looking at the value added in each sector of the economy.

The two measures of national income are linked as follows:

GDP = GVA + Taxes earned by the government — Subsidies provided by the government

As such, if the government earned more from taxes than it spent on subsidies, GDP will be higher than GVA. If, on the other hand, if the government provided subsidies in excess of its tax revenues, the absolute level of GVA would be higher than that of GDP.

Simply put, GDP provides the demand side of the economy, and GVA the supply side.

What do the data show?

At aggregate level, in terms of GDP as well as GVA, the economy has gone past the pre-Covid level (FY20). In other words, it has recovered all the lost ground due to the contraction in FY21. However, the sub-components of GDP and GVA reveal the true extent of this recovery.

What do the GDP data show?

Broadly speaking, GDP has four engines of growth in any economy.

In India's case, the biggest engine is private consumption demand from individuals — the money spent by people in their private capacity. This demand typically accounts for 56% of all GDP and is technically called the "Private Final Consumption Expenditure" or PFCE.

The second-biggest engine is the money spent by companies and government towards making investments such as building a new office, buying a new computer or building a new road etc. This type of expenditure or "demand" accounts for 32% of all GDP in India; and is technically called Gross Fixed Capital Formation or GFCF.

The third engine is the money spent by the government towards its day-to-day expenses such as paying salaries. This accounts for 11% of India's GDP, and is called "Government Final Consumption Expenditure (GFCE)".

The fourth engine is demand from "Net Exports" (NX). This is the money spent by Indians on foreign goods (that is, imports) subtracted from the money spent by foreigners on Indian goods (exports). Since in most years India imports more than it exports, the NX is the smallest engine of GDP growth and is often negative. It is for this reason that NX will be excluded from the rest of the analysis.

So, GDP = PFCE + GFCF + GFCE + NX

While all components have gone past the pre-Covid level, the recovery is dissimilar. In fact, in percentage terms, the recovery is the opposite of the relative importance of the different types of demands.

So, while the government's expenditures are more than 6% higher than FY20 levels, investments (with three times the weight) are up less than 4% and private demand (five times the weight) is just 1.4% above the FY20 level.

What do the GVA data show?

Overall GVA was almost 3% more than the FY20 level.

While all sectors show an increase over FY21, different sectors of the economy tell a different story. Agriculture and allied sectors, for instance, never contracted and continued to grow through the last two years. At the end of FY22, it was 6.5% higher than the pre-Covid level.

Manufacturing is up over 9% from pre-Covid levels. But there are other sectors (such as mining and construction) that either show a moderate increase or a deficit — contact-intensive services such as trade and hotel etc. are still more than 11% below pre-Covid levels.

What is the takeaway?

It is a matter of relief that India's economy has, at least on aggregate parameters, gone past pre-Covid levels. However, this recovery is neither uniform nor broad-based, and has created its own set of winners and losers.

This so-called "K-shaped" recovery — or growing inequality in the economy — is best captured by the fact that even though at the aggregate level both GDP (national income) and PFCE (expenditure) have crossed the pre-Covid level, the average Indian hasn't yet recovered.

The second point to remember is that this is a "recovery" only when compared to the pre-Covid level — and not to what would be the pre-Covid growth trajectory. According to the RBI, getting back to the pre-Covid trajectory will take India up to 2034-35 and that too is preconditioned on an annual economic growth rate of 7.5%.

Lastly, when it comes to future growth, the outlook is sobering. Growing geopolitical uncertainties, rising crude oil prices (and inflation), tightening of monetary conditions (higher interest rates) etc. are likely to dampen the anaemic growth private consumption demand and thus rein in growth prospects in the current (FY23) and the coming (FY24) fiscals.

INDIAN PRIVATE REFINERS PROFIT FROM CHEAP RUSSIAN CRUDE

There's a split emerging in India's refining sector as private refiners tap cheap Russian crude and boost profits from exports just as domestically-focused state refiners get squeezed by high oil costs and government-capped fuel prices.

While many Western buyers are avoiding Russian crude in response to its invasion of Ukraine, private Indian refiners such as Reliance and Nayara have been among the biggest buyers this year of discounted Russian supplies.

They are reaping major profits by reducing domestic sales and aggressively boosting fuel exports, including to buyers in Europe, which is now boycotting imports of Russian energy.

Smaller buyers

In contrast, state refiners are much smaller buyers of Russian crude as they largely buy oil under annual term-supply deals. They face potential losses in the June quarter, industry sources say, as

they grapple with rising global crude costs and controlled retail fuel prices that are unchanged since early April to rein in spiraling inflation.

India has bought about 62.5 million barrels of Russian oil since Moscow's invasion of Ukraine on February 24 — more than thrice the amount in the year-earlier period — with more than half for private refiners Reliance and Nayara Energy, Refinitiv Eikon data shows.

In turn, private refiners have helped drive total Indian fuel exports 15% higher in the first five months of 2022 compared with the same period in 2021, according to data firm Kpler.

Reliance, operator of the world's biggest refining complex at Jamnagar, recently deferred its refinery maintenance plan, bought 'arbitrage' barrels on the international crude oil market, and boosted fuel exports, it said last month.

PROPOSED SCHEME WILL HELP DISCOMS CLEAR PART OF THEIR DEBT. BUT STRESS IN POWER SECTOR CALLS FOR STRUCTURAL OVERHAUL

Last week, the Union power ministry proposed a new scheme to help cash strapped power distribution companies (discoms) clear their mounting obligations. In 2020, finance minister Nirmala Sitharaman had announced a Rs 90,000-crore liquidity infusion scheme (this was subsequently raised to Rs 1.2 lakh crore) for discoms to settle their debt. Similar schemes in the past have failed to address the structural issues that plague the power sector, the distribution segment in particular. Rolling out another scheme is unlikely to help.

Discom dues are currently estimated to be around Rs 1 lakh crore. Six states — Rajasthan, Uttar Pradesh, Maharashtra, Andhra Pradesh, Telangana and Tamil Nadu — account for a significant share of the dues. Under the new proposed scheme, discoms will be allowed to pay off their obligations over 48 installments. The proposal also involves freezing the principal and the late payment surcharge on the date of the notification of the scheme. States such as Tamil Nadu and Maharashtra are expected to benefit the most from this restructuring. Considering that discom payments have on average been delayed by 4-6 months across 15 states as per CRISIL, these payments would offer some relief for the generating companies.

The financial position of discoms continues to be dragged down by a combination of inadequate and irregular tariff revisions, delayed subsidy payments by state governments, inadequate reduction in aggregate technical and commercial losses (a combination of technical losses, inefficiency in billing and power theft), and rising power costs. Successive attempts over the years to tackle these issues have failed to bring about a turnaround in the financial and operational position of discoms. With each passing year, the funds required to plug the gaps are only increasing. But, with the pandemic stretching government finances — both the Centre and the states have witnessed a steep rise in their debt levels — continuing financial support to discoms will become fiscally challenging. The reluctance to raise tariffs or bring down AT&C losses signals a lack of resolve at the state level.

INDIA'S CHANGING GOAL POSTS OVER COAL

The story so far: In April, Finance Minister Nirmala Sitharaman said India's transition away from coal as a fuel for power would be hampered by the Russia-Ukraine war. "One calculation which I think we had in our mind was that the transition [away from coal] ... will be enabled by natural

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gas," she said, adding that "lowering dependence on coal, and the speed with which we want to get out of it, will now be challenged."

Why is the 'move away from coal' so important?

The threat of global warming looms over the planet, promising to bring about unprecedented natural calamities.

An effective way to keep the danger at bay is to cut the use of fossil fuels — coal, natural gas and oil. About 80% of the world's energy requirements are met by these three fuels. They have likely brought on the climate crisis we now face, as they trigger the emission of carbon dioxide. However, the worst culprit of them all is coal, which emits nearly twice as much carbon dioxide as natural gas and about 60% more than oil, on a kilogram-to-kilogram comparison. Combusting coal also leaves behind partially-burnt carbon particles that feed pollution and trigger respiratory disorders. The consequence of these chemical reactions gains great significance because, the power sector in India accounts for 49% of total carbon dioxide emissions, compared with the global average of 41%.

What is the extent of India's dependence on coal?

As of February 2022, the installed capacity for coal-based power generation across the country was 2.04 lakh megawatt (MW). This accounts for about 51.5% of power from all sources. This compares with about 25,000 MW of capacity based on natural gas as fuel, or a mere 6.3% of all installed capacity. Renewable power accounted for 1.06 lakh MW or 27%.

Coal-based power stations are retired periodically which happens all the time. But is not fast enough nor are new additions being halted. And with good reason – coal is still inexpensive compared with other sources of energy.

For FY20, for example, India added 6,765 MW power capacity based on coal as fuel. But only 2,335 MW was retired. According to the IEA's Coal Report 2021, India's coal consumption will increase at an average annual rate of 3.9% to 1.18 billon tonnes in 2024.

So, it is not easy to shift away from coal overnight. As the World Coal Association CEO Melissa Manook put it while on her India visit recently, "Coal will still be a significant contributor in the energy sector even in 2040!"

How has war made India's move away from coal difficult?

Natural gas has been dubbed as the transition fuel in India's plans to move away from coal. The international cost of natural gas has zoomed in the recent past from a level that was considered already too high to be financially viable. On May 17, 2022, the price per MMBTU of gas was ₹1,425, compared with ₹500 in April, 2021.

Even back in November last, well before the war made things difficult, the government put in place a committee to ensure that natural gas prices remained stable. Of the 25,000 MW of gas-based power plants, about 14,000 MW remains stranded, or idle, because they are financially unviable.

While renewable energy sources are cheaper than coal, their ability to generate power consistently is subject to the whims of nature — the wind and the Sun. Coal can give you power on demand. Storage technologies are still not mature enough to help renewable energy sources become reliable generators of power.

Is there a coal availability crisis that is exacerbating our problems?

It appears that the pent-up demand returning in the economy which was in a pandemic-induced stupor for a while has caught policymakers off guard. From having asked States only recently to stop importing coal, the power Ministry urged States earlier this month to step up coal imports as the private sector would take till about 2025 to produce significant amounts of coal.

As per a letter by the Ministry, Coal India, the country's largest supplier of the dry fuel is set to import coal for the first time since 2015. The aim of the exercise is to avoid a repeat of the power outage crisis that India faced in April — the worst in more than six years. Following the issue of the letter dated May 28 to all state utilities, officials at the States and the Centre, including to the Coal Secretary, the central government has asked States to place import tenders on hold with a view to cut procurement costs using government-to-government channels.

An internal power Ministry presentation is said to point to a 42.5 million tonne (MT) coal shortage in the quarter ending September on the back of high demand for power supply. The shortage is 15% higher than earlier anticipated. Domestic supply of coal is expected to be 154.7 MT, compared with the projected requirement of 197.3 MT. The previously anticipated shortage was 37 MT. The projections for requirements for the year ending March are 3.3% higher than earlier anticipated at 784.6 MT. Without imports, utilities are likely to run out of coal supplies by July.

INDIA'S EV AMBITION RIDES ON THREE WHEELS

India's push for electric vehicles (EVs) was renewed when phase-II of the Faster Adoption and Manufacturing of (Hybrid and) Electric (FAME) Vehicles scheme in India, with an outlay of ₹10,000 crore, was approved in 2019. This was significant since phase-I, launched in 2015, was approved with an outlay of ₹895 crore. India was doubling down on its EV ambitions, focusing on cultivating demand for EVs at home while also developing its own indigenous EV manufacturing industry which could cater to this demand.

Initially envisioned for three years, FAME-II got a two-year extension in June 2021 owing to a number of factors including the pandemic. It aims to support 10 lakh e-two-wheelers, 5 lakh e-three-wheelers, 55,000 e-four-wheeler passenger cars and 7,000 e-buses. Three years into FAME-II, the numbers have been lagging far behind the original three-year target. As a part of FAME-II, the government has made a push for indigenous manufacturing with a number of automakers answering the call. Legacy auto manufacturers such as Tata Motors, Mahindra & Mahindra, Hero Electric, and TVS unveiled their EV offerings. New EV players also emerged on the scene with the likes of Ola and Bounce entering the e-two-wheeler segment. While e-two-wheelers and e-four-wheelers receive significant coverage, a three-wheeled underdog has been quietly dominating the Indian EV space.

The dominance of e-3-wheelers

Three-wheeler EVs like e-autos and e-rickshaws account for close to 65% of all EVs registered in India. In contrast, two-wheeler EVs come at a distant second with over 30% of registrations and passenger four-wheeler EVs at a meagre 2.5%. Under the targets for FAME-II, e-three-wheelers have crossed over 4 lakh vehicles of the 5-lakh target since 2019. The numbers are expected to be higher given the prevalence of unregistered vehicles in India. At the current rate, e-three-wheelers are expected to breach the 5-lakh target by 2023. Given the success of e-three-wheelers, it is worth

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taking a closer look at their dominant position, how they got here, and what India's EV policy can do to sustain their success and extend it to the other categories.

The EV registrations data show that Assam, Bihar, Delhi, Uttar Pradesh and West Bengal account for close to 80% of all e-three-wheeler registrations, with U.P. accounting for close to 40% of all registrations. Of these five States, Assam, Delhi, U.P., and West Bengal have formalised EV policies while Bihar has a draft policy with a final policy due to be introduced later in 2022. Incidentally, these five States are characterised by high population density and shortage of affordable public transport. Indigenously designed and produced, e-three-wheelers like e-rickshaws have become a common sight in these States. Costing between ₹1 lakh and ₹1.5 lakh, these vehicles are produced by scores of local workshops and small enterprises and have come to dominate the e-three-wheeler market. With financial assistance from FAME-II, local manufacturers have built a truly Indian EV with its unique design catering to Indian commuter needs. Legacy automakers with their own e-three-wheeler offerings have been struggling to compete with these local producers. The EV policies put in place by these States as part of FAME-II have been instrumental in driving this growth.

The focus of the EV policies of these five States is on accelerating adoption of EVs among consumers and promoting local manufacturing. All five States provide road tax exemption of 100% and on registration fees. Assam, Delhi and West Bengal have linked incentives to the battery size (in kWh) with additional benefits on interest rate on loans and scrappage incentives in some cases. U.P. has gone a different way with its subsidies, offering 100% interest-free loans to State government employees for purchasing EVs in the State and 30% subsidy on the road price of EVs to families with a single girl child. To promote sales of EVs manufactured within the State, U.P. exempts SGST on all such vehicles. It has outlined incentives to promote EV manufacturing in the State. Bihar's draft EV policy too has been drafted along similar lines: it focuses on adoption and manufacturing. These States have performed exceptionally well in the FAME-II scheme and are on their way to achieve the target of 5 lakh e-three-wheelers.

The success India has experienced in the e-three-wheeler space has come from developing both the demand and supply sides. Subsidies, tax exemptions, and interest-free loans have successfully rallied demand for these vehicles. These vehicles provide for inexpensive means of transport for millions, are easy to maintain, and have relatively low operating costs, making them immensely popular among operators. The indigenous design allows for easy local manufacturing in workshops and small enterprises and makes them relatively easy to charge and maintain compared to their two-wheeler and four-wheeler counterparts. This success in the e-three-wheeler space has been difficult to replicate in the e-two-wheeler and e-four-wheeler space, which have problems both on the demand and supply side. Since two-wheelers and four-wheelers are essentially associated with personal use, consumers are justifiably apprehensive in adopting such vehicles given the host of issues which come with it. The recent incidents of fires in e-scooters have added to the apprehension. Reliable manufacturers with proven track records in the two-wheeler and four-wheeler EV space in India are hard to come by. This further adds to the supply side crunch and there are very few affordable offerings for the consumer.

Issues to be addressed

The current policies in place at the State level, which are focused on accelerating adoption of EVs among consumers, have spurred an e-three-wheeler dominance. However, this has come at some costs. A major one is adequate passenger safety. Subsequent EV policies must therefore pay special attention to this issue. Local manufacturing enterprises often lack the necessary resources

or the motivation to invest in design developments focusing on safety. Lack of proper oversight from regulatory bodies over these manufacturers add to the woes. Future policies must therefore incorporate appropriate design and passenger safety standards. While the current State-level policies have been instrumental in increasing local e-three-wheeler manufacturing, they have led to an increasingly fragmented manufacturing industry with non-uniform standards akin to the formative years of motor vehicles in the early 20th century. This fragmentation has led to legacy automakers struggling to compete with the large number of manufacturers in every State. EV policies must address this issue so that legacy automakers are not demotivated from competing in the e-three-wheeler space. Their resources are necessary for designing and manufacturing more advanced and safer e-three-wheelers. Future EV policies must therefore take into account the existing and emerging stakeholders on the demand and supply sides for effective implementation. With the prevailing trajectory of EVs, India must take lessons from its e-three-wheeler success story to sustain its EV ambitions.

EXPLAINED: THE CASE FOR SIX AIRBAGS

On January 14 this year, Road Transport and Highways Minister Nitin Gadkari tweeted: "In order to enhance the safety of the occupants in motor vehicles carrying upto 8 passengers, I have now approved a Draft GSR Notification to make a minimum of 6 Airbags compulsory."

No timelines were mentioned then, but Gadkari had in August last year urged all automakers in India to offer at least six airbags as standard equipment on all variants of all models. Dual airbags (driver and passenger) became mandatory on all vehicles this January. A driver airbag has been compulsory for all passenger vehicles since July 1, 2019.

What type of vehicles are covered by the proposed mandate on six airbags?

Additional airbags are proposed in the 'M1' category of vehicles, with the aim of minimising the impact of "frontal and lateral collisions" to the occupants of both the front and rear compartments. As per the proposal, two side or side torso airbags, and two side curtain or tube airbags covering all outboard passengers, will be made mandatory.

How airbags protect And what is an 'M1' vehicle?

Under the government's homologation rules, vehicles are bucketed into broad categories. 'Category M' covers motor vehicles with at least four wheels, used for carrying passengers. Sub-category 'M1' defines "a motor vehicle used for the carriage of passengers, comprising not more than eight seats in addition to the driver's seat".

This category effectively subsumes the bulk of the passenger vehicles on India's roads — from entry-level hatchbacks such as the Suzuki Alto or Hyundai Santro to multi-utility vehicles such as the Toyota Innova or Kia Carnival. These vehicles are employed mostly for private use, alongside some commercial use by fleet operators.

What exactly is homologation?

Homologation is the process of certifying that a particular vehicle is roadworthy, and matches certain specified criteria laid down by the government for all vehicles that are built or imported into the country. Tests are done to ensure the vehicle matches the requirements of the Indian market in terms of emissions, and safety and roadworthiness, as laid down by the Central Motor Vehicle Rules.

But why do vehicles need more airbags?

Airbags soften the impact of collisions by keeping occupants from coming into contact with the steering wheel, dashboard, front glass, and other parts of the automobile.

Airbags are literally a question of life and death: the US government agency National Highway Traffic Safety Administration (NHTSA) estimated that from 1987 to 2017, just frontal airbags saved 50,457 lives in that country.

India's record on road security is among the poorest in the world, and Indian cars are famously behind the curve when it comes to offering safety features. This is especially glaring when comparisons are made with models offered by manufacturers in other global markets, including those made by carmakers operating in India.

Companies that sell the same car model in global markets choose to cut down on some key security features when they launch in India's price-sensitive market.

What could be the challenges in implementing the proposed mandate?

Pricing will be a key challenge: more airbags as standard equipment will inevitably drive up the cost of vehicles, including those on the budget end of the market.

A frontal airbag in an entry-level car typically costs between Rs 5,000 and Rs 10,000, and side and curtain airbags could cost more than double that. Most carmakers in India that offer six airbags only do so in top-end models, and in variants that cost upward of Rs 10 lakh.

Manufacturers have also flagged that a number of entry-level models are specifically designed for markets such as India, and that installing additional airbags will involve considerable re-engineering, including making modifications to the body shell and the inside compartment. This was seen as a deterrent in the Santro's case.

Then there is the timing. India's auto industry is currently transitioning to stricter BS6 emission norms, and implementing the new Corporate Average Fuel Economy or CAFE norms, both of which have cost implications.

So what is the car manufacturers' argument here?

Manufacturers argue that consumers get what they pay for, and very few buyers in the budget category want to shell out more for a safer car.

When Maruti Suzuki drew up the preferences of Indian car buyers — tabulated over time from enquiries made at the point of purchase — it found safety features such as ABS (anti-lock brake system) and airbags came in at eighth position, far behind bells and whistles such as air conditioning, power windows, and central locking.

Executives at the company say that driver-seat airbags were offered in the top variant of the Wagon-R, but the model had to be withdrawn due to the lack of interest among consumers.

And what is the counter-argument?

Safety experts say that safety features such as twin airbags, ABS and rear wipers would only add up to Rs 25,000 to the cost of the car. It is only because they are not mandatory that manufacturers

provide these features only in top-end versions of cars, and bundle them with other features, thereby making the vehicle costlier by about Rs 1.20 lakh or more.

In effect, this deprives Indian car buyers of variants that have these essential safety features.

What are the rules on airbags elsewhere in the world?

In the United States, front airbags are required by law in all cars. But most carmakers offer between six and 10 airbags, depending on the model, primarily to score higher in crash test results from agencies like the NHTSA and the private nonprofit Insurance Institute for Highway Safety (IIHS). No vehicle without head-protecting side airbags has ever earned a top rating in the IIHS's side crash test.

Some countries outside North America adhere to internationalised European ECE vehicle and equipment regulations instead of US standards. ECE airbags are generally smaller and inflate less forcefully than the airbags that are offered in the US, because the ECE specifications are based on belted crash test dummies.

Almost every new car sold in Europe is equipped with front and side airbags. In the EU and in the United Kingdom, there is no direct legal requirement for new cars to feature airbags. But again, most variants are equipped with at least 4-6 airbags, primarily to comply with crash test norms, and to score higher on the safety count.

FRAMEWORK ON ANVIL TO CURB FAKE REVIEWS ON E-COMMERCE SITES

To protect consumer interest, the Centre will develop a framework to keep a check on fake reviews on e-commerce websites like Amazon and Flipkart.

The Department of Consumer Affairs (DoCA) will prepare the framework after studying the current mechanism being followed by other e-commerce companies and "best practices available globally", the Consumer Affairs Ministry said in a statement on Saturday.

The decision comes after the ministry and the Advertising Standards Council of India (ASCI) held a virtual meeting on Friday with e-commerce companies, along with other stakeholders, to discuss the magnitude and roadmap ahead for fake reviews on such websites.

Nidhi Khare, Additional Secretary, and Anupam Mishra, Joint Secretary, in the DoCA also attended the meeting.

According to an official statement, the issues discussed during Friday's meeting included how paid reviews, unverifiable reviews and absence of disclosure in case of incentivised reviews make it challenging for consumers to recognise genuine reviews.

Shopping on e-commerce sites does not allow users an opportunity to physically examine a product which means that consumers rely heavily on product reviews before making a purchase decision.

"Traceability by ensuring the authenticity of the reviewer and the associated liability of the platform are the two key issues here. Also e-comm players must disclose as to how they choose the 'most relevant reviews' for display in a fair and transparent manner," Rohit Kumar Singh, Secretary, DoCA, said.

E-commerce entities participating in the virtual meeting "agreed that the issue deserves to be monitored closely" and also claimed that they have frameworks in place by which they monitor fake reviews on their sites, the Ministry said.

The companies also showed an interest in participating with the government to come up with the framework, it added.

HOW MAHARASHTRA OVERTOOK UP TO RE-EMERGE AS TOP SUGAR PRODUCER

After a five-year gap, Maharashtra has overtaken Uttar Pradesh (UP) to regain its position as India's top sugar producer.

Shekhar Gaikwad, sugar commissioner of Maharashtra, expects the state's output for the 2021-22 crushing year (October-September) at 138 lakh tonnes (lt). That is an all-time-high, beating the previous 107.21 lt of 2018-19.

Prakash Naiknavare, managing director of the National Federation of Cooperative Sugar Factories, attributes the record production to three factors.

The first is the bountiful rainfall Maharashtra has been receiving since the 2019 southwest monsoon season (June-September). The filling up of reservoirs and recharged groundwater aquifers has induced farmer to plant more area under sugarcane, which is a 12-18 months duration crop. The benefits of abundant water and expanded acreage accrued fully in 2021-22.

The second is higher yields from farmers taking extra care of their crop. Exemplifying this is Vinod Momale, who cultivates sugarcane on 11 out of his total 40-acre holding in Gurdhal village of Latur district's Deoni taluka. He has harvested an average per-acre cane yield of 60 tonnes this year, as against 50 tonnes in 2020-21.

"My five wells and farm pond (which can store 1 crore litres of rainwater) have been full in the last two years," says this farmer, who grows soyabean on 15, tur (pigeon-pea) on 8 and green fodder on his remaining land. Improved water availability, especially after the drought from early-2018 till mid-2019, also emboldened Momale to plant 5 acres under 'adsali', an 18-month cane yielding more than the regular 12-month 'suru' and 15-month 'pre-seasonal' crops. "This was the first time I took adsali (planted in June-July 2020) and reduced the area under suru (planted in December-January 2020-21). My overall yield has, therefore, risen," he explains.

Underreported cane

But there is a third factor for Maharashtra's sugar production scaling a new peak. It has to do with a huge jump in "unregistered" cane cultivation. In 2020-21, the state reported a total area of 11.42 lakh hectares (lh) planted under cane. While the sugar commissioner's office has estimated this year's area at 12.4 lh, millers peg it at least one lh higher – and all this is cane that farmers haven't "registered" for supplying to any factory.

EXPLAINED: WHAT IS LIQUID NANO UREA, PRODUCED BY IFFCO, WHICH CAN POTENTIALLY REVOLUTIONISE THE USE OF NITROGEN FERTILISERS IN INDIA?

During his visit to Gujarat this week, Prime Minister Narendra Modi officially inaugurated the country's first liquid nano urea plant at Kalol. This patented product is expected to not only substitute imported urea, but to also produce better results in farms.

In what respects is the indigenous liquid nano urea a better bet than imported urea?

The liquid nano urea produced by Indian Farmers Fertiliser Cooperative (IFFCO) Limited comes in a half-litre bottle priced at Rs 240, and carries no burden of subsidy currently. By contrast, a farmer pays around Rs 300 for a 50-kg bag of heavily subsidised urea.

"The international market price of a bag of urea is between Rs 3,500 and Rs 4,000, and significant quantities of it is imported," said Alok Jaiswal, senior manager (process), and operations head of IFFCO's liquid nano urea plant.

According to IFFCO, a bottle of the nano urea can effectively replace at least one bag of urea.

The Prime Minister spoke about the high fertiliser subsidy bill of the government, as India is dependent on imports of the widely used fertiliser. The government's fertliser subsidy payout this financial year will be Rs 2 lakh crore, up 25 per cent from the Rs 1.6 lakh crore it paid last year.

But what exactly is liquid nano urea, and how does it work?

It is essentially urea in the form of a nanoparticle. Urea is a chemical nitrogen fertiliser, white in colour, which artificially provides nitrogen, a major nutrient required by plants.

The product has been developed at IFFCO's Nano Biotechnology Research Centre (NBRC) at Kalol. Apart from reducing the country's subsidy bill, it is aimed at reducing the unbalanced and indiscriminate use of conventional urea, increase crop productivity, and reduce soil, water, and air pollution.

While conventional urea has an efficiency of about 25 per cent, the efficiency of liquid nano urea can be as high as 85-90 per cent. Conventional urea fails to have the desired impact on crops as it is often applied incorrectly, and the nitrogen in it is vaporised or lost as gas. A lot of nitrogen is also washed away during irrigation.

Liquid nano urea is sprayed directly on the leaves and gets absorbed by the plant. Fertilisers in nano form provide a targeted supply of nutrients to crops, as they are absorbed by the stomata, pores found on the epidermis of leaves, officials said. IFFCO advises that 2-4 ml of nano urea should be mixed a litre of water and sprayed on crop leaves at active growth stages.

Liquid nano urea has a shelf life of a year, and farmers need not be worried about "caking" when it comes in contact with moisture.

According to IFFCO, liquid nano urea contains 4 per cent total nitrogen (w/v) evenly dispersed in water. The size of a nano nitrogen particle varies from 20-50 nm. (A nanometre is equal to a billionth of a metre.)

IFFCO says the product has been tested on more than 90 crops across 11,000 locations in collaboration with Krishi Vigyan Kendras of the Indian Council of Agricultural Research (ICAR-KVKs), research institutes, state agriculture universities, and progressive farmers. "The trials began in November 2019 and was meant to test the product on the farm under different climatic and soil conditions," Jaiswal said.

How much chemical fertilisers does Gujarat use?

Gujarat is expected to see a 19 per cent growth in the use of chemical fertilisers during the upcoming kharif season, 2022. The Gujarat government will provide a subsidy of Rs 5,278 crore

to farmers for an estimated 19.95 lakh tonne of fertilisers that are expected to be used this kharif season. Along with the spend during the rabi season, the state's fertiliser subsidy bill is more than Rs 10,000 crore.

Gujarat government officials said "natural" farming is still at a nascent stage, and it will be a few years before it can have an impact on the use of chemical fertilisers. However, the government has already begun cutting down on chemical fertilisers.

For instance, under the Krishi Vaividhyakaran Yojana or the Agriculture Diversification Project implemented for tribal farmers in 14 districts, the government has started substituting chemical fertilisers with organic fertilisers in the kits it hands out. In Dangs, which has been declared a 100 per cent natural farming district, no chemical fertilisers are being given under this scheme this year.

Officials said that apart from helping cut the use of conventional fertlisers, liquid nano urea is also comparatively safe for the environment.

What is planned for the future with regard to liquid nano urea production?

IFFCO commissioned the Kalol liquid nano urea plant, the country's first, in August 2021. Over 3.6 crore bottles of this urea have been produced, of which 2.5 crore have been sold.

IFFCO is setting up additional facilities for production of nano fertilisers at Aonla, Phulpur, Bengaluru, Paradeep, Kandla, Deoghar and Guwahati, besides expanding the Kalol plant, for the production of nano urea, nano DAP and nano micronutrients. These units will have a production capacity of 2 lakh bottles per day.

EXPLAINED: WHAT IS A UNICORN, AND WHAT DOES IT TAKE TO BECOME ONE?

Unicorns are privately held, venture-capital backed startups that have reached a value of $1 billion. The valuation of unicorns is not expressly linked to their current financial performance, but largely based on their growth potential as perceived by investors and venture capitalists who have taken part in various funding rounds.

When was the term first used?

American venture capitalist Aileen Lee is credited with coining the term in 2013. It was used to emphasise the rarity of the emergence of such startups.

Are unicorns still a rarity?

From the time the term was first used, it has become more common for startups to bag the unicorn tag, but the $1 billion valuation still gets industry attention, and is considered an impressive achievement. According to PitchBook, a financial data and software company, a convergence of private and market funding is allowing more unicorns to emerge, faster.

What is India's unicorn record?

During his recent 'Mann Ki Baat' radio address, Prime Minister Modi said that a record 44 unicorns were established in India last year during the pandemic. "Not only that, 14 more unicorns were formed anew in three-four months this year. This means that even in this phase of the global pandemic, our startups have been creating wealth and value," he said.

According to Invest India, the government's National Investment Promotion and Facilitation Agency, "The year 2021, 2020, and 2019 saw the birth of the maximum number of Indian unicorns with 44, 11, and 7 unicorns coming each year, respectively."

It adds that between 2015 and 2021, the country's startup ecosystem has seen a nine-time increase in the number of investors, and a seven-time increase in the total funding of startups.

"We are gradually transitioning from the age of unicorns to the age of decacorns. A decacorn is a company that has attained a valuation of more than USD10 billion. As of May 2022, 47 companies world over have achieved the decacorn status. India has four startups namely, Flipkart, BYJU's, Nykaa and Swiggy, added in the decacorn cohort," says Invest India on its website.

EXPLAINED: WHY EXPRESS VPN HAS REMOVED ITS SERVERS FROM INDIA, AND WHAT HAPPENS TO USERS NOW

ExpressVPN has removed its servers from India, becoming the first major virtual private network (VPN) provider to do so in the aftermath of the recent cybersecurity rules introduced by the country's cybersecurity agency. The rules require VPN providers to store user data for a period of five years. ExpressVPN said it "refuses to participate in the Indian government's attempts to limit internet freedom".

Why has ExpressVPN removed its servers in India?

In a blog post, the British Virgin Island-based company said that with the introduction of the new cybersecurity rules by the Indian Computer Emergency Response Team (CERT-In), it has made a "very straightforward decision to remove our Indian-based VPN servers". While ExpressVPN is the first to pull its services from India, other VPN providers like NordVPN have also taken a similar stance.

The company's decision comes after Minister of State for Electronics and Information and Technology Rajeev Chandrashekhar warned VPN companies that if they do not adhere to the norms, they are free to exit the country. Last month, he had said, "If you're a VPN that wants to hide and be anonymous about those who use VPNs and you don't want to go by these rules, then if you want to pull out (from the country), frankly, that is the only opportunity you will have. You will have to pull out."

What are India's new VPN norms?

The guidelines, released by CERT-In on April 26, asked VPN service providers along with data centres and cloud service providers, to store information such as names, e-mail IDs, contact numbers, and IP addresses (among other things) of their customers for a period of five years. The government said it wants these details to fight cybercrime, but the industry argues that privacy is the main selling points of VPN services, and such a move would be in breach of the privacy cover provided by VPN platforms.

ExpressVPN described the cybersecurity rules as "broad" and "overreaching".

"The law is also overreaching and so broad as to open up the window for potential abuse. We believe the damage done by potential misuse of this kind of law far outweighs any benefit that lawmakers claim would come from it," ExpressVPN said.

It added that while CERT-In's rules are intended to fight cybercrime, they are "incompatible with the purpose of VPNs, which are designed to keep users' online activity private".

So, what happens to Indian users of ExpressVPN?

Indian users of ExpressVPN will still be able to use its service via "virtual" India servers located in Singapore and the UK.

"We will never collect logs of user activity, including no logging of browsing history, traffic destination, data content, or DNS queries. We also never store connection logs, meaning no logs of IP addresses, outgoing VPN IP addresses, connection timestamps, or session durations," the company said.

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LIFE & SCIENCE

EXPLAINED: WHY NEPTUNE AND URANUS APPEAR IN DIFFERENT COLOURS

Neptune and Uranus have much in common — they have similar masses, sizes, and atmospheric compositions — yet their appearances are in different shades of blue. At visible wavelengths, Neptune is a rich, deep azure hue, while Uranus is a distinctly pale shade of cyan. Astronomers now have an explanation for why the two planets are different colours.

One reason why this difference had not been explained so far was the absence of similar data for comparison. Previous studies of the spectrum of each planet concentrated on individual wavelength regions. In the new comparison, researchers have developed a single atmospheric model that matches observations of both planets from the NASA/ESA Hubble Space Telescope, as well as the Gemini North telescope and the NASA Infrared Telescope Facility. The model shows that the haze around Uranus is thicker than that around Neptune, the researchers have reported in the Journal of Geophysical Research: Planets.

Uranus's stagnant, sluggish atmosphere and makes it appear a lighter tone than Neptune. If there was no haze in the atmospheres of Neptune and Uranus, both would appear almost equally blue as a result of blue light being scattered in their atmospheres, a release on the ESA Hubble website explained.

The model leading to this conclusion describes three aerosol layers in the atmospheres of Neptune and Uranus. The key layer that affects the colours is the middle layer, which is a layer of haze particles that is thicker on Uranus than on Neptune. The team suggests that, on both planets, methane ice condenses onto the particles in this layer, pulling the particles deeper into the atmosphere. Because Neptune has a more active, turbulent atmosphere than Uranus does, the team believes Neptune's atmosphere is more efficient at churning up methane particles into the haze layer. This removes more of the haze and keeps Neptune's haze layer thinner than it is on Uranus, with the result that the blue colour of Neptune looks stronger.

COCCOLITHS FOSSILS

An international team of scientists have found a remarkable type of fossilisation that has remained almost entirely overlooked until now. The fossils are microscopic imprints, or 'ghosts,' of single-celled plankton, called coccolithophores, that lived in the seas millions of years ago, and their discovery is changing our understanding of how plankton in the oceans are affected by climate change.

Declines in the abundance of coccoliths fossils have been documented from multiple past global warming events, suggesting that these plankton were severely affected by climate change and ocean acidification. But a study found (Science) new global records of abundant ghost fossils from three Jurassic and Cretaceous warming events (94, 120 and 183 million years ago), suggesting that coccolithophores were more resilient to past climate change than was previously thought.

Despite their microscopic size, coccolithophores can be hugely abundant in the present ocean, being visible from space as cloud-like blooms. After death, their calcareous exoskeletons sink to the seafloor, accumulating in vast numbers, forming rocks such as chalk.

As more mud was gradually deposited on top, the pressure squashed the coccolith plates and other organic remains together, and the hard coccoliths were pressed into the surfaces of pollen, spores and other soft organic matter. Later, acidic waters within spaces in the rock dissolved away the coccoliths, leaving behind just their impressions — the ghosts.

THE TURING TEST

The Turing test, named after British mathematician Alan Turing was a concept proposed to test if a machine could deceive a person into thinking it was human. Turing called it the 'imitation game' and first discussed it in his 1950 paper, 'Computing Machinery and Intelligence' while working at the University of Manchester. Turing was addressing a philosophical problem that other mathematicians and scientists were wrangling with, given that the first computers — based on vacuum tubes and large electrical systems — were already around. The question was: Can machines think? Given that this was a subjective question, Turing broke it down into a testable format.

The hypothesis

Turing proposed that an objective way to test for intelligence in machines is to have a computer perform a task in the same way a real person would. Computers in their early days were envisaged as calculation machines and, though nowhere near the speed at which they compute today, they could perform calculations beyond human capability. Therefore, having a computer and a person perform complex math calculations wouldn't be an appropriate test of a machine's humanity. Therefore, Turing proposed the equivalent of a 'party game' wherein a man and woman would go into separate rooms and answer, in writing, questions posed by guests. The aim of the game was for the man and the woman to convince the guests that they were the other.

Turing is considered the father of modern computer science, having in 1936, conceived of a 'Universal Machine' that in theory could compute anything and lies at the heart of the modern digital computer. His conception of computers as thinking machines gestated the development of Artificial Intelligence.

The results

Passing the Turing test would mean that computers were able to convince people they were human. Turing stated that it wouldn't be inconceivable for computers, 50 years from the writing of his paper, to pass the 'imitation game.' (Mathematician Alonzo Church was the first to refer to this problem as the 'Turing test.'). Since then, at various points, machines have superficially passed the test.

The earliest was a program called ELIZA, created at the Massachusetts Institute of Technology by Joseph Weizenbaum in the 1960s. ELIZA, was a chatbot modelled on a psychotherapist. In response to typed questions, Eliza was programmed to pick on certain words, reframe that as a question and pose it back. For eg: Eliza would begin: "Is something troubling you?" A response: "Men are all alike." Eliza: "What is the connection, do you suppose?"

Because these conversations could go on indefinitely, many users believed that they were talking to a sentient machine who understood them and sometimes, offered insight. Weizenbaum developed ELIZA to show that it was possible to simulate conversation with a machine, without the latter grasping the context. ELIZA was never part of a formal evaluation of a Turing Test but is

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nevertheless considered important in the history of machine intelligence because it suggested that machine-human interactions could be conducted in a way that gave an illusion of intelligence.

The Loebner Prize is a competition that has provided a platform for practical Turing tests. A panel of judges awarded prizes for the program that came closest to imitating human like conversation. The interactions between man and machine are conducted via text-chats. The chief criticism of programs that have won is that they aren't really designed to determine intelligence but rather simply to fool humans. The assumption is that intelligence is the ability to deceive. There have been significant advances in machine's ability to understand human language, as the increasing use of Alexa and Siri suggest, but it's quite apparent that they are far from being considered to have reached a stage where they can easily trick most people into believing them to be human.

MONA LISA — WIDELY LOVED, FREQUENTLY ATTACKED

Arguably the most recognised painting in the world, Leonardo da Vinci's Mona Lisa, housed at the Louvre museum in Paris, was smeared with cake by a climate activist disguised as an elderly woman on Sunday. There was no damage to the Renaissance artwork, which is protected by a bulletproof glass.

The painting

Considered an archetypal masterpiece of the Italian Renaissance, it is believed to have been painted between 1503 and 1517.

Dressed in Florentine fashion, the half-length portrait has a figure seated against a mountainous landscape painted in sfumato technique, where there is a play of light and shade and the colours are blended into each other with no evident boundaries.

While one proposition offered is that both a man and a woman modelled for the portrait, another set believes it is a disguised self-portrait of its Italian polymath creator.

However, the subject of the painting is largely believed to be Lisa Gherardini, wife of Francesco del Giocondo, a wealthy silk merchant from Florence. Historians believe Francesco commissioned the painting for their new home and to celebrate the birth of their second son, Andrea.

It has been a subject of numerous studies. While some admire the work for the manner in which da Vinci applied his study of human anatomy during its conception, Mona Lisa's enigmatic expression, which seems both enticing and distant, has intrigued viewers for centuries.

EXPLAINED: WHO ARE THE TAMAGOTCHI GENERATION, THE DIGITAL CHILDREN OF THE FUTURE?

A new book has predicted that by the third quarter of this century, parents will have the choice of having digital offspring. Which means that if you are in your teens now, you may look forward to playing with a grandchild who will exist only in the immersive digital world of the metaverse.

This will be the 'Tamagotchi Generation', says British behavioural psychologist and user experience (UX) professional Catriona Campbell, author of 'AI By Design: A Plan for Living With Artificial Intelligence' (CRC Press, 2022).

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"Virtual children may seem like a giant leap from where we are now, but within 50 years technology will have advanced to such an extent that babies which exist in the metaverse are indistinct from those in the real world," Campbell writes. "As the metaverse evolves, I can see virtual children becoming an accepted and fully embraced part of society in much of the developed world."

Why 'Tamagotchi' kids?

The name comes from the digital pet created by the Japanese toy manufacturer Bandai, which was a global rage in the 1990s and early years of this century. As of last year, more than 80 million Tamagotchi toys had been sold worldwide.

The toy is an egg-shaped video game the size of a keychain, which has a screen and buttons. Once the pet is activated, an egg appears on the screen, and hatches into a pet for the player to raise. The pets feel hungry, happy, sick, and want to go to the toilet etc., and the player can care as much or as little for the pet as they desire. What the pet grows up to be depends on how it has been trained and raised by the player.

What will the kids look like?

Today's technology is unrecognisable from the time when the Tamagotchi toy was developed, and according to Campbell the virtual children of the future can be built to look like their parents, and will be able to provide a range of emotional responses. This, according to an article in The Guardian, will include speech, "which will range from 'googoo gaga' to backchat, as they grow older".

You will have to put on a virtual reality headset to bring the child to life — and a report in The Telegraph quoted Campbell as suggesting that wearing "high-tech gloves able to deliver tactile feedback" while handling the Tamagotchi kid "might reproduce the physical sensations of cuddling, feeding and playing with one's offspring".

A report in The Mail Online quoted Campbell as saying parents would be able to interact with their digital kids in digital environments such as a park, swimming pool or living room. "They will also be able to choose how quickly the children grow up, if at all, and can share conversations and listen to a baby's coo and giggle as part of the vision for the futuristic technology," the Mail Online report said.

But what's wrong with real kids?

There is nothing wrong — the Tamagotchis will just be the metaverse version for those who might want them. And the metaverse is seen as the inevitable future of the Internet.

However, Campbell has mentioned what she sees as specific advantages to preferring a virtual kid to a real one — among them, the fact that they will cost virtually nothing to bring up, they will consume very little resources in a world that is already bursting at the seams and where the spectre of food shortages looms large, and they will have a tiny environmental footprint from beginning to end.

The Telegraph report quoted a 2020 YouGov study into why couples chose not to have children found that nearly 1 in 10 are concerned about overpopulation, and another 10 per cent are worried about the cost of raising a child.

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"Make no mistake that this development, should it indeed take place, is a technological game-changer which, if managed correctly, could help us solve some of today's most pressing issues, including overpopulation," the Mail Online report quoted Campbell as saying.

All of this sounds so fantastical and improbable.

It may not be. The Internet and mobile phones also sounded like bizarre ideas to many when they were first proposed. Tech experts have repeatedly predicted that the metaverse and Internet of Things, powered by advanced telecoms networks of the future, will change almost every aspect of the ways in which we live and work.

So far as digital babies go, a proof of principle is already in existence. Several years ago, the Laboratory for Animate Technologies at the University of Auckland said it was working on "an interactive animated virtual infant prototype" called BabyX, a "computer-generated psychobiological simulation...incorporating computational models of the basic neural systems that are involved in interactive behaviour and learning".

The New Zealand company Soul Machines, led by AI researcher Dr Mark Sagar (who worked on the special visual effects of Hollywood films 'King Kong', 'Avatar', and 'Rise of the Planet of the Apes'), has since pioneered research into progressing human-machine collaboration, and built BabyX with her own digital brain which, according to the company, "autonomously animates BabyX in real-time, creating a natural interaction between human and machine".

NANOBOTS DIG DEEP TO DISINFECT TOOTH

Few things are as shorn of complexity as the root canal treatment so much so that the basic principles of performing them have been unchanged from the times Romans inserted bronze wires into their teeth to treat the infection.

Once the shooting pain has been diagnosed as being due to a bacterial infection within the tooth, the dentist drills a hole, scoops out the infected pulp, disinfects the tooth and fills the space with an antibacterial sealant like bleach or hydrogen peroxide.

The hope is that the job is thorough and the vanquished bacteria doesn't rejuvenate. Estimates from the United States suggest that of the 35 million dental procedures to treat a root canal, about 10% are failures.

A common cause of failure is that the underlying bacteria, usually Enterococcus faecalis, hasn't been completely eliminated paving the way for reinfections that can necessitate extracting the tooth.

The quest to deliver enough antibacterial agent to the depths of the tooth has in recent years seen extremely sophisticated, complex, cutting-edge approaches that make the conventional RCT appear not just pre-Roman but even Stone Age.

Laser therapy

Rather than the dentist's drill, a fine beam of light pushes an antibacterial deep into the tooth's passageway in this approach. Another is to use ultrasound waves to, again, make the antibacterial go deeper. Some early experiments with lasers attempted to do away with pushing antimicrobials altogether and use the heat from ultra-thin light beams to incinerate the bacteria.

But the equipment, expertise and the risk of harming healthy tissue makes these approaches a rarity, particularly in Indian dental clinics. But Theranautilus, a Bengaluru based start-up incubated at the Indian Institute of Science, aspires to go one up by employing nanotechnology. By deploying an army of so called 'nanobots', or tiny 'robots' that are helical crawlers made of silicon dioxide coated with iron, the aim is to have the bots move as close to where the bacteria abound.

The bots' movement can be controlled using a device that generates a low intensity magnetic field. In their tests, Theranautilus scientists injected these nanobots into extracted tooth samples and tracked their movement via a microscope. By manipulating the frequency of the magnetic field, the nanobots could be made to move at will, and penetrate deep inside the dentinal tubules. The dentist can control the movement of billions of these nanobots, each no more than 300 nanometres (1,000 times thinner than hair) and take them to the site of the bacterial infection. Working in tandem, these nanobots can generate enough heat to kill the bacteria but not damage surrounding healthy tissue, said Shanmukh Srinivas, a dentist and co-founder of the company.

A research report by Theranautilus scientists in the journal Advanced Healthcare Materials says that tests on mice revealed the use of nanobots as safe.

Towards clinical trials

Mr. Srinivas said that the next step ahead will be to test the device in people via clinical trials and the company is in the process of tying up with hospitals for the same. "Were everything to go to plan, we expect that this treatment will be available at the clinic in four-five years," he added.

Their research paper says that while nanobot-heat eliminated the bacteria, there was a possibility that some bacteria could remain and therefore the nanobots could even be used as drug delivery vehicles to transport antibacterial material.. The amount of silica in every dose of treatment was less than that in a pint of beer, according to Mr. Srinivas, and was extremely safe.

PAYING A PRICE

In three weeks since the first case of monkeypox infection was confirmed on May 7 in the U.K. in a person who had just arrived from Nigeria (where the outbreak has been continuing since September 2017) the virus has spread to at least 21 countries and infected 226 people, mainly in Europe and North America. The U.K., which is the hardest hit, has reported 106 lab-confirmed cases as of May 26. As per WHO, more cases can be expected as surveillance expands; scientists believe the virus has been spreading under the radar for some time. For instance, a person in Canada had symptoms of monkeypox on April 29, though it was not tested at that time. Similarly, the monkeypox genome sequence first shared by Portugal was from a sample collected on May 4 but was not tested for monkeypox till the U.K. reported the first case. All the 21 countries that have reported at least one case are non-endemic for monkeypox, raising concerns about the fast spread of the virus, by far the largest outbreak in humans outside Africa. Two rave parties in Spain and Belgium have been super-spreader events. Nigeria has reported 231 confirmed cases and eight deaths since 2017, with 15 cases reported this year till April 30. There have been a few instances of exportation to non-endemic countries from Nigeria since 2017, and eight such instances in all from the endemic countries in Central and West Africa. However, human-to-human transmission in non-endemic countries has been very limited, if at all, in the past.

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Despite the first case in humans being reported in 1970, and the virus becoming endemic in about a dozen countries in Africa, very little attention has been paid to study the virus characteristics, the host animal, and the modes of transmission. However, in September 2019, the FDA approved a vaccine, and two antivirals approved for treating smallpox have shown promise in animal studies. It is unclear how long it would take to contain the outbreak. Meanwhile, there is a potential risk of the virus jumping from humans to animals, which may make it endemic in these countries. While China was rightly criticised for keeping the SARS-CoV-2 outbreak a secret for weeks, the developed countries have paid scant attention to stop the outbreak in Nigeria. The low mortality rate of about 1% for the virus clade now in circulation in Europe and North America, the slow rate of mutation, the relative ease of stopping the virus spread, and the availability of vaccines should not be a reason once more to ignore the virus spread in Nigeria. Instead, it should spur more research on the virus and make vaccines and antivirals available in Nigeria and other endemic countries in Africa.

MONKEYPOX WON'T TURN INTO PANDEMIC: WHO

The World Health Organization's top monkeypox expert said she doesn't expect the hundreds of cases reported to date to turn into another pandemic, but acknowledged there are still many unknowns about the disease, including how exactly it's spreading and whether the suspension of mass smallpox immunisation decades ago may somehow be speeding its transmission.

In a public session on Monday, WHO's Rosamund Lewis said it was critical to emphasise that the vast majority of cases being seen in dozens of countries globally are in gay, bisexual or men who have sex with men, so that scientists can further study the issue and for populations at risk to take precautions. "It's very important to describe this because it appears to be an increase in a mode of transmission that may have been under-recognised in the past," Dr. Lewis, WHO's technical lead on monkeypox, said.

Still, she warned that anyone is at potential risk of the disease, regardless of their sexual orientation. Other experts have pointed out that it may be accidental that the disease was first picked up in gay and bisexual men, saying it could quickly spill over into other groups if it is not curbed. To date, the WHO said 23 countries that haven't previously had monkeypox have reported more than 250 cases.

Dr. Lewis said it's unknown whether monkeypox is being transmitted by sex or just the close contact between people engaging in sexual activity and described the threat to the general population as "low".

"It is not yet known whether this virus is exploiting a new mode of transmission, but what is clear is that it continues to exploit its well-known mode of transmission, which is close, physical contact," she said.

WHAT IS THE WEST NILE VIRUS, HOW DOES IT SPREAD?

The Kerala health department is on alert after the death of a 47-year-old from Thrissur due to the West Nile Virus. Earlier in 2019, a six-year-old boy in Malappuram district had died of the same infection. The virus was first reported in the state in Alappuzha in 2006 and then in Ernakulam in 2011. What is the West Nile Virus and how does it spread?

The virus, its transmission

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The West Nile Virus is a mosquito-borne, single-stranded RNA virus. It is a flavivirus related to the viruses that cause St. Louis encephalitis, Japanese encephalitis, and yellow fever.

Culex species of mosquitoes act as the principal vectors for transmission. It is transmitted by infected mosquitoes between and among humans and animals, including birds, which are the reservoir host of the virus.

"Mosquitoes become infected when they feed on infected birds, which circulate the virus in their blood for a few days. The virus eventually gets into the mosquito's salivary glands. During later blood meals (when mosquitoes bite), the virus may be injected into humans and animals, where it can multiply and possibly cause illness," says the WHO.

WNV can also spread through blood transfusion, from an infected mother to her child, or through exposure to the virus in laboratories. It is not known to spread by contact with infected humans or animals.

According to the US Centre for Disease Control and Prevention (CDC), it does not spread "through eating infected animals, including birds. Always follow instructions for fully cooking meat".

The CDC notes that the incubation period for WNV disease is typically 2 to 6 days, but can range from 2 to 14 days, and can be several weeks in immunocompromised people.

To date, no human-to-human transmission of WNV through casual contact has been documented, says the WHO.

Symptoms

The disease is asymptomatic in 80% of the infected people. The rest develop what is called the West Nile fever or severe West Nile disease.

In these 20% cases, the symptoms include fever, headache, fatigue, body aches, nausea, rash, and swollen glands.

Severe infection can lead to neuroinvasive disease such as West Nile encephalitis or meningitis or West Nile poliomyelitis or acute flaccid paralysis. WNV-associated Guillain-Barré syndrome and radiculopathy have also been reported.

"It is estimated that approximately 1 in 150 persons infected with the West Nile Virus will develop a more severe form of disease…. Recovery from severe illness might take several weeks or months. Some effects to the central nervous system might be permanent," says the CDC.

It usually turns fatal in persons with co-morbidities and immuno-compromised persons (such as transplant patients).

Detection of WNV

The virus was first isolated in a woman in the West Nile district of Uganda in 1937. It was identified in birds (crows and columbiformes like doves and pigeons) in the Nile delta region in 1953. Before 1997, WNV was not considered pathogenic for birds, but then, a more virulent strain caused the death in Israel of different bird species, presenting signs of encephalitis and paralysis.

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In 1999, a WMV strain, believed to be one circulating in Israel and Tunisia, reached New York producing a large outbreak that spread across the United States and eventually across the Americas, from Canada to Venezuela.

According to the WHO, human infections attributable to WNV have been reported in many countries in the world for over 50 years.

WNV outbreak sites are found along major bird migratory routes.

Today, the virus is found commonly in Africa, Europe, the Middle East, North America, and West Asia.

WMV in India

In India, antibodies against WNV were first detected in humans in Mumbai in 1952 and virus activity has since been reported in southern, central, and western India. WNV has been isolated in India from Culex vishnui mosquitoes in Andhra Pradesh and Tamil Nadu, from Culex quinquefasciatus mosquitoes in Maharashtra, and from humans in Karnataka.

Febrile illness and encephalitis cases in epidemic form were observed in Udaipur district of Rajasthan, Buldhana, Marathwada and Khandesh districts of Maharashtra.

Further, human sera collected from Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, Gujarat, Madhya Pradesh, Odisha, Rajasthan and Assam has shown presence of WNV neutralising antibodies.

Serologically confirmed cases of WNV infections were reported from Vellore and Kolar districts during 1977, 1978 and 1981, and in West Bengal in 2017.

In 2013, the complete genome sequence of WNV was isolated from human samples during an acute encephalitis outbreak in Kerala between May and June 2011.

A 2011 study in India had "clearly established" the association of WNV with ocular infection in Tamil Nadu during an epidemic of mysterious fever in the first half of 2010.

Preventive measures

In most countries, the peak for WNV infections generally coincides with the period when mosquito vectors are most active and the ambient temperature is sufficiently high for virus multiplication. Since WNV outbreaks in animals precede human cases, the establishment of an active animal health surveillance system to detect new cases in birds and horses is considered essential in providing early warning for veterinary and human public health authorities.

The European Centre for Disease Control and Prevention (ECDC) has also often suggested in its annual epidemiological report that to prevent blood transfusion-transmitted WNV infections during the active virus transmission period. It is advised that "EU/EEA countries should implement 28-day blood donor deferral or nucleic acid testing of prospective donors who have visited or lived in an affected area" and similarly, donors of organs, tissues and cells living in or returning from an affected area should be tested for WNV infection.

Treatment

No WNV-specific prophylaxis, treatment or vaccine is available. So, only supportive treatments are given to neuroinvasive WNV patients. Health authorities globally advice for personal protective measures to reduce the risk of mosquito bites such as using mosquito repellents, and for public health departments to ensure larval source reduction especially at breeding and resting sites for the mosquito vectors.