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DreamIAS

## International

### Shooting in Pensacola

- The deadly shooting at Florida's Pensacola Naval Air Station by a Saudi aviation student that killed three and injured eight others is a fresh challenge to the Saudi authorities who are trying to remake the kingdom's image after a series of recent setbacks. U.S. federal investigators say they are yet to establish the gunman's motive, but some lawmakers have already claimed it was an act of terror. The suspect, Mohammed Alshamrani, 21, who had been training in the U.S. for two years, had watched mass shooting videos a week before Friday's assault, say investigators. A Twitter handle that is believed to have belonged to him called the U.S. a "nation of evil" and blamed it for "crimes not only against Muslims but also humanity". This is not the first time a Saudi national is attacking Americans inside the U.S. Fifteen of the 19 al-Qaeda-linked terrorists behind the September 11, 2001 attacks, were Saudi citizens. But U.S.-Saudi relations have deepened over the years despite the 9/11 attacks. U.S. President Donald Trump, in his quest to contain Iran, Saudi Arabia's main regional rival, has doubled down on America's ties with the Kingdom. But his push for stronger ties with the Saudis had faced severe resistance from U.S. lawmakers. The murder of Saudi dissident journalist Jamal Khashoggi in 2018, suppression of dissent at home by the Saudi authorities, and the ongoing Saudi-led war on Yemen have all brought renewed global focus on the character of the Saudi leadership. Riyadh was quick in condemning the "barbaric" Pensacola shooting, saying the shooter did not represent the Saudi people. The incident is unlikely to upset the U.S.-Saudi military ties immediately as both countries need each other in the larger geopolitical setting; 2,000 more American troops could be sent to the Kingdom to take on Iran. But the incident could strengthen the perception, especially among U.S. lawmakers, that the conservative Kingdom is not doing enough to flush out extremism given that the attacker was a second lieutenant in the Royal Saudi Air Force. It also raises questions about the vetting standards of both countries. More important, it is America's lax gun rules that allowed the shooter to buy

the Glock 45 9-mm handgun which he used for the attack. Initial reports suggested that he used a loophole in the gun laws to buy the weapon legally. Despite repeated incidents of gun violence — most by Americans against Americans — the U.S. federal government could do little in addressing the problem. Worse, Mr. Trump and his Republican Party are opposed to stringent gun control rules. The U.S. has to first review its lax gun rules and then address issues such as vetting standards, foreign military ties and radicalism in general if it wants to prevent such incidents.

Bluster, bigotry, Bolsonaro (Vijay Prashad, Renata Porto Bugni, and André Cardoso work at the Tricontinental: Institute for Social Research)

- In January, Jair Bolsonaro will become the third Brazilian President to be honoured as chief guest at the Republic Day parade, the first two being Fernando Henrique Cardoso (1996) and Luiz Inácio Lula da Silva (2004). Both Mr. Cardoso and Mr. Lula were respected figures on the world stage and neither came to New Delhi bathed in controversy. On the other hand, Mr. Bolsonaro's popularity rating within Brazil has fallen sharply, while his standing amongst world leaders is woeful. A culture of toxicity pervades Mr. Bolsonaro's coalition, whose views on women and minorities, and promises and policies on environment and culture, tear apart any shred of consensus in Brazil. On his first day in office, Mr. Bolsonaro struck at the autonomy of Brazil's indigenous communities and ordered the Human Rights Ministry to disregard the complaints of the LGBTQ population. These orders fulfilled campaign pledges to two of Mr. Bolsonaro's three main constituencies: first, the agri-business bloc (colloquially called 'Beef'), which has long wanted to farm the Amazon, large parts of which are under the control of the indigenous people; second, the conservative evangelical bloc (the 'Bible'), which has never come to terms with the reality of the LGBTQ community. The third bloc, 'Bullet', comprises the country's militaristic sections.

  **Increase in poverty, hunger and hate**

  Not long into his tenure, Mr. Bolsonaro said that talk of poverty in Brazil is a "big lie". But this goes against the Brazilian government's own

data, which suggest that 55 million Brazilians (out of a population of 209 million) live in poverty. United Nations data show that hunger in Brazil, which had been largely eradicated by the Lula administration's Fome Zero (Zero Hunger) programme, is now back in the country. The government does not admit to reality, denying its own data and so it has not formulated a credible policy to tackle pressing problems — hunger, landlessness, and desolation — of a large section of the population. All this is deeply familiar. Over the past decade, in different tempos, parties of the far right have come to power across the world. Most of them favour a form of right-wing nationalism steeped in xenophobia, hatred for minorities, and pickled in ancient quarrels that do not help tackle the problems of the present. These are political formations that pretend to turn inward, but which in fact promote a globalisation that benefits a narrow set of people. Mr. Bolsonaro withdrew Brazil from its commitments to the UN's Global Compact for Safe, Orderly, and Regular Migration. This Compact is a liberal approach by the UN towards the general increase in migration, both internal and external; it asks countries to follow basic rules grounded in the UN Charter. What does it mean for a country like Brazil to no longer be in this Compact? It means that Brazil is under no obligation to treat migrants with decency but, more than anything, it sends a signal to believers of the far-right ideology inside Brazil that the dignity of migrants no longer needs to be recognised. Belligerence is the outcome of such a withdrawal. Mr. Bolsonaro's withdrawal from this Charter is a mirror of U.S. President Donald Trump's desire to build a wall on the Rio Grande, and also of India's National Register of Citizens. It is this hatred for migrants, the presumed 'outsiders' and other vulnerable people, that evokes an acerbic form of nationalism. Hatred masquerades as patriotism. The size of national flags grows; the enthusiasm for the national anthem increases by decibels.

**Pro-business agenda**

Beneath the noise and dust of Mr. Bolsonaro's outrageous statements is a methodical attempt by the far right to push through long-desired policies. It has been able to 'reform' social security provisions, and is seeking to undermine labour laws and increase working hours. Mr.

Bolsonaro wants to auction off Brazil's oil reserves, and is open to a setting up of U.S. military base in Alcantara. Further, fires in the Amazon have not stalled his wish to turn the forests over to the agri-business lobby. Most Brazilians are against this government, though they have not been able to effectively unite against it. Many still shake their heads in disbelief that Mr. Bolsonaro is their President. During the last presidential election, it was clear that the polls favoured a return of Mr. Lula to the presidency. But a mysterious set of circumstances led to his arrest for corruption on the slenderest of evidence. It turns out now that the prosecutor and the judge could have colluded to fix up Mr. Lula's arrest, which disoriented the left and provided Mr. Bolsonaro with a political opening. However, after 580 days in prison, Mr. Lula has now been released. He is now travelling across Brazil, addressing enormous crowds, building resistance against Mr. Bolsonaro's toxic agenda.

## The day of Boris

- The decisive victory the Conservative Party clinched in Thursday's elections to Parliament gives British Prime Minister Boris Johnson, who built his campaign around the promise to "get Brexit done", a clear mandate to take the U.K. out of the European Union without further delay. Initial results show that his party is set to win 364 seats in the 650-member House of Commons, the greatest performance of the Conservatives in over three decades. The Labour, led by veteran socialist Jeremy Corbyn, is expected to win 203 seats, its worst performance in decades. It is Mr. Johnson's victory. He is the one who called for an early election after reaching a new divorce deal with the EU. He turned the poll into a de facto Brexit referendum, arguing that only a stable Conservative government could take the U.K. out of the EU quickly and end the lingering political standoff. His strategy was to consolidate the pro-Brexit vote, get a fresh mandate in Parliament and then quicken the divorce process. The Labour Party, on the other side, has been ambivalent on the question of Brexit. Mr. Corbyn promised another referendum and declined to state what his position would be during that vote. His focus was on the economy. He promised a radical

expansion of the state, with plans to tax the rich, increase public spending and nationalise utilities. The Labour leader may have hoped that his radical economic agenda would cut through the Brexit narrative. But it did not. In the end, Labour fought a Brexit election without articulating a clear position on Brexit. Unsurprisingly, it lost even its traditional working class districts in the Midlands and north of England that had overwhelmingly voted to leave in the 2016 referendum. Mr. Johnson is now confident that he could push his withdrawal agreement through Parliament at the earliest so that Britain could leave the union before the January 31 deadline. But a big victory or a timely exit does not mean that the road ahead is smooth. His Brexit agreement itself is controversial; once implemented, it could erect an effective customs border between Britain and the island of Ireland. The question is what impact Mr. Johnson's deal will have on the Good Friday agreement that brought peace to Northern Ireland and to the unity of the Kingdom in general. Second, a more difficult part of the Brexit process is negotiating an agreement on the U.K.'s future relationship with the EU. Mr. Johnson has promised to finish the negotiations during the 11-month transition period, but it could take years. Lastly, more than Brexit, the poll results pose administrative and constitutional challenges to the Prime Minister. In Scotland, the Scottish National Party's landslide victory — it is poised to win 48 out of the 59 Westminster seats — has already rekindled calls for a second referendum on Scottish independence. This will put the SNP on a warpath with the Tories who are opposed to a new referendum. Mr. Johnson might go down in history as the Prime Minister who took the U.K. out of the EU. But at what cost is the question. The answer will be known in bits and pieces in the coming days.

## Russia banned from Olympics

- The decision by the World Anti-Doping Agency (WADA) to ban Russia from global sporting events for a four-year period is arguably the biggest sporting crisis the country has faced till date. The anti-doping watchdog's move will hurt Russia the most at the 2020 Tokyo Olympic Games and the 2022 Beijing Winter Olympics where the nation's flag,

name and anthem will not be allowed. Russia will inevitably approach the Court of Arbitration for Sport with an appeal, for which it has three weeks, but if the sentence is upheld it could bar the nation from participation in several high-profile global sporting events including the 2022 football World Cup in Qatar. The saga has its roots in the scandal that erupted on the eve of the 2016 Rio Olympics, when whistle-blower reports nailed Russia for running one of the most sophisticated doping programmes. The allegations centred around the active collusion of Russian anti-doping experts, the sports ministry and members of the country's intelligence service in replacing dope-tainted urine samples with clean ones during the 2014 Winter Olympics in Sochi. In September 2018, as part of the resolution of that case, Russia reluctantly agreed to open up its database to corroborate the findings of the reports. WADA has now ruled that the country manipulated this very database in order to cover up large-scale violations. However, as stiff as the latest sanctions seem, there is considerable doubt among anti-doping crusaders whether the measures go far enough. Even ahead of the Rio games, WADA had recommended that Russia be expelled, but the International Olympic Committee (IOC), under President Thomas Bach, had left the decision to individual sports' governing bodies, and, subsequently, athletes who were cleared of doping were allowed to compete as neutrals. A similar episode had played out during the 2018 PyeongChang Winter Games, where Russia was again banned but individual athletes competed. The IOC's hand may be forced this time around by the sheer magnitude of the findings, but there remains a similar possibility of Russian competitors still participating. It may be worth noting that despite Sochi, Russia still played host to marquee events such as the 2015 World Aquatics Championships and the 2018 FIFA World Cup and is again slated to host the swimming event in 2025. In a sense, both the IOC and WADA have had to straddle the thin line between two powerful but opposing arguments — of punishing Russia, the country, for its misdemeanours while at the same time preserving natural justice for athletes who are clean. But, increasingly it feels like a situation where even honest

sportspersons may end up paying the price for the machinations of their corrupt administrators.

Iraq's autumn of discontent (Mahesh Sachdev, a retired diplomat, was Ambassador to Algeria, Norway and Nigeria)

- In its heyday in the late 1970s, Iraq was considered the luckiest Arab country as it had both oil and water, a relatively modern citizenry, and a Ba'athist regime which, though authoritarian, was progressive and less corrupt. Ironically, since then, Iraq has endured four decades of near ceaseless depredations with three 'Mother of All Battles', economic sanctions, occupation, and existential duels with al Qaeda and the Islamic State (IS). Recently, it has been crippled by agitations led by youth railing against an inapt and corrupt leadership. They are frustrated because of unemployment, decaying civic amenities, and foreign domination. On December 1, the Iraqi Parliament accepted the resignation of the Prime Minister throwing the country into a fresh bout of political instability.

  **Protests and the way ahead**

  Iraqis' discontent is rooted in reality. In 2018, Iraq's oil exports were $91 billion, or over $6 a day for each citizen. Yet, over 41% of population lived below the poverty line of $3.2/day. Two years after the defeat of the IS, millions of internally displaced Iraqis still await rehabilitation. Iraqis also resent foreign hegemony, mainly by the U.S. and Iran. The attempts to burn down the Iranian consulates in Karbala and Najaf last month show popular antipathy. The redeeming features of the protest movement have been its non-violence and inclusivity, despite Iraq being a sectarian, tribal society awash with weapons. The protests have often been met with excessive force by authorities leading to over 400 deaths. Last week, unknown gunmen massacred 22 protestors and three policemen in Baghdad. Although the agitators reject the current political system, they lack a precise alternative. They call for a revolution to dismantle the *Muhasasa system* of sect-based allocation of government positions and replace it with direct elections and meritocracy. While they are resolute and united, the absence of any hierarchy or nationwide coordination renders them vulnerable to

manipulation and divisions. But then, these attributes also allow them moral high ground and focus. Arrayed against the utopian and inexperienced youth are formidable forces: the wily politico-clergy nexus (and their sectarian militias), anarchists like al Qaeda and IS scheming for a rerun, and renegade Ba'athists yearning for Saddam Hussein's authoritarianism. Since the U.S. invasion in 2003, anarchic and enfeebled Iraq has been a hunting ground for various foreign powers — the U.S., Iran, Israel, Sunni Gulf powers, and Turkey — and their local proxies. With its geostrategic location, massive oil reserves and large Shia population, Iraq is a big prize. Although the Prime Minister's resignation has broken a protracted stalemate, the prospects for an early positive resolution appear dim. The agitation could either coagulate into a more inclusive political force, or fragment along sectarian lines, or morph into a militancy. To survive, Iraq's ruling politico-religious elite would need a package addressing agitators' basic demands and mitigating their distress. The new dispensation would need to be sectarian-light. To make a clean break from the current discredited system, Iraq will need a new electoral law or even a new Constitution. In a young democracy, it is important to create institutions sympathetic to the youth's aspirations. The new leadership would also be under scrutiny for its nationalism.

**India's role**

For Indians, the developments in Iraq may appear as a distant rumble. They are not. One, Iraq is India's largest source of crude. A protracted instability in Iraq would result in oil price rise. Two, with direct bilateral trade of over $24 billion in 2018-19, Iraq is already a large market for India's exports with sizeable potential for growth. Three, in the 1975-85 decade, Iraq was the biggest market for India's project exports; its post-conflict reconstruction requirement would be huge. Additionally, India can also help Iraq in MSMEs, skill development, healthcare, education, and improved governance. But before all this can happen, India would need to help Iraq avoid the worst-case scenario. For this, it needs to hold Iraq's hand to foster political reforms and help create credible and effective socio-political institutions. Over the past 70 years, India has created such institutions suited for a multi-ethnic developing society.

This makes it compatible to partner with Iraq. Moreover, India's millennia-long civilizational ties with Mesopotamia give it a tradition of goodwill with all sections of Iraqi society. This legacy needs to be leveraged not only to help transform Iraq, but also revitalise India's bilateral ties with this friendly country in the extended neighbourhood.

## Suu Kyi denies Myanmar genocide allegations at ICJ

- Nobel Laureate Aung San Suu Kyi arrived in the Netherlands on December 8 to lead her country's defence against charges of carrying out a genocide against its Muslim Rohingya minority. In hearings at the Peace Palace at The Hague, where the International Court of Justice (ICJ) is housed, lawyers pressing the case will ask for immediate international action in Myanmar to protect the Rohingya.

  **Who has taken Myanmar to the ICJ?**

  It is the Republic of the Gambia, a tiny country the size of Tripura, which stretches out as a thin strip of territory on either side of the river Gambia before it empties itself into the North Atlantic Ocean on the west coast of Africa. The Gambia, which is predominantly Muslim, went to the ICJ in November 2019, accusing Myanmar of genocide, which is the most serious of all international crimes. The Gambia is backed by the 57-member Organisation for Islamic Cooperation (OIC). The case, 'Application of the Convention on the Prevention and Punishment of the Crime of Genocide (The Gambia v. Myanmar)', seeking the "indication of provisional measures", will be heard by 16 United Nations judges at the ICJ for three days from Tuesday (December 10) to Thursday (December 12). Both the Republic of The Gambia and the Republic of the Union of Myanmar will have the opportunity to present two rounds of oral arguments before the court, and the hearings will be streamed live on the ICJ website.

  **What is the Rohingya crisis in Myanmar?**

  An estimated 7.3 lakh Rohingya have fled to Bangladesh since 2017 when the Myanmar military launched a brutal crackdown on Rohingya villages in the country's Rakhine state. In August, the UN said the army action was carried out with "genocidal intent". Myanmar has stoutly denied all allegations of genocide. It has also denied nearly all

allegations made by the Rohingya of mass rape, killings and arson against its army. Myanmar says the soldiers carried out legitimate counterterrorism operations. In its defence, which Suu Kyi will present personally, the country will say that no mass killings of Rohingya have taken place. It will also argue that the ICJ has no jurisdiction and that the case by The Gambia fails to meet full legal requirements.

**What will happen after the hearings are over?**

The ICJ will decide the plea on provisional measures fairly soon — possibly within weeks. The hearings dealing with the main, and more serious allegations of genocide will follow — and could begin next year. That said, cases at the ICJ often drag on for years on end, and no quick closure can be reasonably expected. Also, as commentators quoted by international media reports have argued, the legal bar for handing out a conviction for genocide is rather high. So far, only three cases of genocide worldwide have been recognised since World War II: Cambodia (the late 1970s), Rwanda (1994), and Srebrenica, Bosnia (1995). "Proving genocide has been difficult because of the high bar set by its 'intent requirement' — that is showing the genocidal acts, say killings, were carried out with the specific intent to eliminate a people on the basis of their ethnicity," a Reuters report quoted Richard Dicker, head of the international justice programme at New York-based Human Rights Watch, as saying. The ICJ, also known as the World Court, was established in 1945 and has mostly dealt with border disputes. Allegations of war crimes against individuals go before a different court, the International Criminal Court, which too, is based in The Hague.

- Myanmar's former pro-democracy icon Aung San Suu Kyi on Wednesday denied that her country's armed forces committed genocide against the Rohingya minority, telling the U.N.'s top court that the exodus of hundreds of thousands of Muslims was the unfortunate result of a battle with insurgents.

## Bougainville votes to become world's newest country

- With Bougainville's overwhelming vote for independence from Papua New Guinea (PNG), the country has crossed a milestone in the peace

process following the civil war that ended in 1998. The non-binding referendum, to ascertain a preference for either greater autonomy or separate statehood, was a promise enshrined in the 2001 Bougainville Peace agreement. In a province of fewer than 3,00,000, the voting process spanning two weeks underscored the challenges facing the regional administration in Buka and that in the national capital of Port Moresby. The Bougainville Referendum Commission undertook the commendable task of enlisting inmates in hospitals and prisons and non-residents to ensure that the conduct of the franchise was inclusive. A testament of the participation was the 85% turnout in the plebiscite. With 98% opting to secede, the people spoke emphatically at the end of an animated campaign. The demand for separate statehood in Bougainville dates back almost to PNG's independence in 1975. This sentiment was further crystallised by the conflict over the open cast copper mine in Panguna town — among the world's largest and richest — whose revenues accounted for over 45% of the country's export earnings. In the confrontation that centred around sharing the mineral resources, the Bougainville Revolutionary Army was pitted against the PNG security forces for a decade. An estimated 20,000 lives were lost and many were displaced. Enforcing the Bougainville verdict is bound to be protracted, characteristic of the political and administrative processes of carving out the boundaries of a new state. Foremost, in an attempt to give shape to the decision, Port Moresby and Buka will engage in negotiations. Any agreement would have to be ratified by the country's Parliament. Significantly, the Central government had hoped that the region would vote to remain rather than secede, whereas among Bougainvillians and observers, the choice for separation was a foregone conclusion. In a sign of the future shape of events, the PNG Minister responsible for Bougainville recently expressed concern that Buka could set a precedent for any other breakaway movement. There are, moreover, issues around the economic viability of the tiny island group. The controversy over the Panguna mine still lingers, as the company that once controlled operations is vying for restoration of its licence. The Bougainville government, which last year clamped an indefinite moratorium on the

mine's reopening, would inevitably have to revisit that decision sooner rather than later. But the advent of the world's 194th nation may be some distance in the future.

Climate treaty at a tipping point (Mukul Sanwal - former UN diplomat in the climate secretariat)

- The annual Climate Summit, with increasing levels of concentration of greenhouse gases, raises questions on global climate policy. The world's major emitter has rejected multilateralism, premised on burden sharing. The European Union's ambition of 'net' zero emissions by 2050 obfuscates needed societal change by ignoring the embedded carbon in imports — a third of their emissions of carbon dioxide. Both are shifting the burden to India and China. The policy problem is that the Climate Treaty considers symptoms (emissions of greenhouse gases), rather than the causes (use of natural resources). India, which is responsible for just 3% of cumulative emissions, is the most carbon efficient and sustainable major economy.

  **Divergent resource use**

  Excessive resource use by a fifth of the world population in a small part of the planet in the West is still responsible for half of global material use and the cause of climate change. Asia with half the world's population is responsible for less than half of material use, and living in harmony with nature. Three shifts in natural resource use have taken place in the last 400 years: from agriculture to industry; rural to urban; and, livelihood to well-being. Colonialism and its aftermath of multinational corporations was the driver of the first shift, infrastructure of the second, and societal notions of progress of the third. Only the first two global trends show limited convergence and stabilisation. The third diverges sharply between material abundance in the West and societal well-being in India and China. Consumption patterns of primary material use for the provision of major services are driven by diverse values that include both global trends transforming human societies — for example, urbanisation, economic globalisation and digitisation, as well as national pathways to achieve prosperity. At the national-level, resource use is primarily construction material and

energy use in buildings, mobility and manufacturing as well as food, which together lead to human well-being. More than half of natural resource use and global emissions occurred after 1950, driven by the gradual shift of three-quarters of the global population to cities. National natural resource-use accelerated in two distinct phases with very different origins and impacts. In North America and Europe, resource use accelerated after 1950, not with industrial resource use from 1850. By 1970, three-quarters of their population had moved to cities, characterised as "unprecedented prosperity", leading to the trajectory towards climate change. China's acceleration of natural resource use from 2000, also driven by urbanisation, is characterised as "unprecedented growth". Different values and the objective of increasing well-being, rather than wealth, led to China, in 2016, having the same per-capita emissions of carbon dioxide as the West had in 1885. The shares of material use of the different activities in cities in China have remained constant since 1995 as increase in wealth does not modify the structural, economic and social changes, energy and material uses in civilizational states. Clearly, there will be no convergence in global material use as values, along with digital service economies in cities, will continue to shape the future. The pathway adopted by China can now be compared and contrasted with the West, as it has come up to that level of urbanisation and well-being. The contribution of the United States to resource use, or cumulative emissions of carbon dioxide, peaked at 40% in 1950, with rapid infrastructure development in Europe, declined to 26% and is likely to remain at this level, reflecting its direction and intensity. By 2015, global population had doubled when emissions in China began to stabilise and accounted for 12% of total cumulative emissions. Asia and Africa will peak at per-capita levels that are a third of those of the West.

**Different views of prosperity**

India and China, civilizational states with a population nearly eight times that of the U.S., have re-defined progress. In China, electricity consumption per-capita is a third of the European Union (EU) and a sixth of the U.S. Residential energy consumption has increased at a

rate less than half the increase in GDP, and corresponds to the increase in urban population, showing limited increase with more disposable household income. China also has less than a sixth of the number of cars with respect to population than the EU, while the U.S. has nearly two times that number. In China, nearly 40% of the distance travelled is by public transport, which is two times that of the EU. While the number of cars in China is projected to double by 2040, half the new cars are expected to be electric vehicles. China has the world's most extensive electric high-speed rail system. In Beijing, three-quarters of public transport buses are already electric. Asian household savings as a percent of GDP are two times that of the U.S. Measures for global sustainability should draw lessons from India and China. For example, transport emissions are the fastest growing emissions worldwide, projected to become half of global emissions, and in the future more polluting than coal use. India and China are global leaders in sustainability not only because of their low per-capita resource use but also because of their contribution to peak oil around 2035 as they adopt electric vehicles supported by solar and wind renewable energy. By then, India and China are expected to have half the global renewable capacity and electric vehicles. By 2040 more than half of global wealth is again going to be in Asia; the low carbon social development model adopted by India and China will become the world system, ensuring global sustainability. Then the pattern of natural resource use adopted by western civilisation will more clearly be seen as a short-term anomaly rather than collective transformation or unified evolution of civilisation. Much before that, alternative strategies led by India and China should replace the ineffective Climate Treaty.

Why 'carbon market' is debated

- Almost halfway through the climate conference in Madrid, one big thing it had to resolve — disagreements over setting up a new carbon market — remains contentious as ever. Carbon markets, which allow for buying and selling of carbon emissions with the objective of reducing global emissions, is an unfinished agenda from last year's meeting in Katowice, Poland.

**The market mechanism**

Under the Paris Agreement, every country has to take action to fight climate change. These actions need not necessarily be in the form of reduction in greenhouse gas emissions, which can constrain economic growth. India, for example, has said it would reduce its emissions per unit of GDP. Only the developed countries have included absolute emission cuts in their action plans. Yet, there is scope for absolute emissions reductions in developing countries too. For example, a brick kiln in India can upgrade its technology and reduce emissions. But because India does not need to make absolute reductions, there is no incentive to make this investment. It is to deal with situations like these that the carbon market mechanism is conceived. Markets can potentially deliver emissions reductions over and above what countries are doing on their own. For example, if a developed country is unable to meet its reduction target, it can provide money or technology to the brick kiln in India, and then claim the reduction of emission as its own. Alternatively, the kiln can make the investment, and then offer on sale the emission reduction, called carbon credits. Another party, struggling to meet its own targets, can buy these credits and show these as their own. Carbon markets also existed under the Kyoto Protocol, which is being replaced by the Paris Agreement next year. The market mechanisms being proposed under the Paris Agreement are conceptually not very different, but are supposed to have more effective checks and balances, and monitoring and verification processes.

**How to set up a market**

The provisions relating to setting up a new carbon market are described in Article 6 of the Paris Agreement. These are enabling provisions that allow for two different approaches of carbon trading, more or less on the lines described earlier. Article 6.2 enables bilateral arrangements for transfer of emissions reductions, while ensuring that they do not double-count the reductions. Article 6.4 talks about a wider carbon market in which reductions can be bought and sold by anyone. Article 6.8 provides for making 'non-market approaches' available to countries to achieve targets. It is not yet very clear what these approaches would

constitute, but they could include any cooperative action, like collaboration on climate policy or common taxation, that are not market-based.

**What is contentious**

The main tussle is over two or three broad issues — what happens to carbon credits earned in the Kyoto regime but not yet sold, what constitutes double-counting, and transparency mechanisms to be put in place. *Developing countries have several million unsold CERs (certified emission reductions), each referring to one tonne of carbon dioxide-equivalent emission reduced, from the Kyoto regime.* Under the Kyoto Protocol, only developed countries had the obligation to reduce emissions. In the initial phase, some of these were interested in buying CERs from projects in India or China, which were not obliged to make reductions. In the last few years, several countries walked out of the Kyoto Protocol, and those that remained did not feel compelled to fulfil their targets. *The second commitment period of the Kyoto Protocol (2012-20) never came into force.* As the demand for CERs crashed, countries like India were left with projects generating CERs with no one to buy them. India has about 750 million unsold CERs and, along with other similarly placed countries, wants these credits to be valid in the new mechanism too. Developed countries are opposing it on the ground that the rules and verification procedures under the Kyoto Protocol were not very robust; they want the new mechanism to start with a clean slate. The second issue is that of double counting, or corresponding adjustment. The new mechanism envisages carbon credits as commodities that can be traded multiple times among countries or private parties. It is important to ensure that in this process, credits are not counted at more than one place; whoever sells carbon credits should not simultaneously count these as emissions it has reduced. The developing countries argue that the country that reduced emissions should be able to show it even after selling the credits, and that adjustments should be made only for subsequent transfers, if any.

**Is it a good idea?**

Carbon markets are not essential to the implementation of Paris Agreement. But with the world doing far less than what is required to prevent catastrophic impacts of climate change, the markets can be an important tool to close the action gap. Developed countries and many civil society organisations say they would rather have no deal on Article 6 of the Paris Agreement than have a bad or compromised deal that would allow transition of Kyoto regime CERs or any kind of double counting. Some developing countries, on the other hand, prefer to have an agreement finalised in Madrid.

## Foreign Affairs

### Capitol Hill raises an eyebrow (Michael Kugelman - Deputy Director and Senior Associate for South Asia with the Asia Program at the Woodrow Wilson International Centre for Scholars, Washington, DC)

- On December 9, when the Citizenship (Amendment) Bill was passed in the Lok Sabha, the U.S. House Foreign Affairs Committee (HFAC) issued an extraordinary statement on Twitter: "Religious pluralism is central to the foundations of both India and the United States and is one of our core shared values. Any religious test for citizenship undermines this most basic democratic tenet. #CABBill." This statement says much about shifting perceptions on Capitol Hill about India and the U.S.-India relationship. It comes on the heels of sharp Congressional criticism of India, much of it levelled by Democrats, and mainly focused on New Delhi actions in Jammu and Kashmir.

**A significant statement**

However, the HFAC tweet is particularly significant. First, it was issued by a Congressional committee — in this case, a key bipartisan body involved with legislation on international affairs. This was not a case of a sole elected official levying criticism. It was a tweet that required some level of informal consensus from the committee in order to be posted. In other words, it reflected the views of a critical mass of

elected officials focused on foreign affairs. Second, the statement targeted a piece of legislation in India that hasn't even been signed into law. This was not a case of the HFAC railing against a newly enshrined law, much less an implemented policy. In other words, the committee was delivering a pre-emptive salvo against a Bill that has quite some time to go before it becomes the law of the land in India. Such criticism, at this relatively early moment in the legislation's life, is quite unusual, and a reflection of the deep concern harboured by Capitol Hill about the Bill. Third, the HFAC statement invoked the U.S.-India relationship. It underscored the shared values that underpin the partnership, before suggesting that the Bill undermines those very values. Indeed, the two democracies have both seen considerable democratic backsliding, including on religious pluralism, over the last few years. The HFAC statement is a reminder that one of the core pillars, shared values, of U.S.-India partnership is taking a major hit. Shared interests more than shared values are increasingly what drive the relationship today. Recent messaging from both capitals, which has emphasised the former more than the latter, makes that quite clear. To be sure, we shouldn't overstate the significance of the HFAC's tweet. Congress doesn't drive or determine policy towards India — a useful reminder when considering the intensifying drumbeat of Congressional criticism (ranging from hearings to a recently introduced bipartisan resolution) of India's actions in J&K. Still, make no mistake: A bipartisan Congressional committee has called out a piece of Indian legislation and highlighted the potential damage it could inflict on the U.S.-India relationship. And such criticism has emerged from one of the most pro-India political places in Washington.

**Another critic**

Consider as well another American government critic of the Citizenship Bill — the U.S. Commission on International Religious Freedom (USCIRF). On December 9, USCIRF released a missive decrying the legislation and calling on the U.S. government to "consider sanctions" against Home Minister Amit Shah and "other principal leadership" if the Bill passes in both legislative chambers. USCIRF too doesn't set U.S. policy on India. Still, it's quite striking to hear an organ of Washington officialdom

speaking of sanctioning Indian officials five years after the Obama administration ended its visa ban on Narendra Modi. This isn't to say that the bilateral relationship is about to take a major plunge. Indeed, the State Department, the Defence Department and the White House remain firmly on board with U.S.-India strategic partnership. Still, at least in some quarters, Washington's love affair with Modi's India has hit a rough patch.

The 'Delhi dogma' fallacy of the right (Happymon Jacob - teacher at the Jawaharlal Nehru University)

- The 4th Ramnath Goenka Lecture by India's External Affairs Minister S. Jaishankar on November 14 was a much-needed master account of India's foreign policy, told in phases, lucid, analytical and comprehensive. Mr. Jaishankar's speech, which reflects a practitioner's hands-on knowledge of India's foreign policy, has, unfortunately, not yet received the critical treatment it deserves. In his speech, the Minister makes a strong pitch to practitioners and analysts to think beyond the "Delhi dogma" that has traditionally defined, and constrained, according to him, the pursuit of India's foreign policy. Though thought-provoking, Mr. Jaishankar's speech is riddled with several empirical and conceptual issues.

  **Of, and for the right**

  To begin with, the speech is a product of a certain messianic presentism of the Indian right that Mr. Jaishankar is a part of. The speech has a heavy self-congratulatory tone aimed at establishing a moral superiority over past governments, as if history began in 2014. To that extent, this is an ideological attempt masquerading as an objective stocktaking of India's foreign policy. The speech makes the cardinal mistake of critiquing history from the luxury of the present, removed from the temporal constraints that forced the decisions of the past: this is a methodological error. When you fuse a methodological mistake with an ideological attempt at moral superiority, you get a flawed analysis of the past. While the speech falls short of telling us what the new big ideas of the Narendra Modi government are, it is big on what today's regime thinks went wrong in the past. One direct result

of presentism is the tendency to judge the merit of one's past policies based on current capabilities. To state, for instance, that taking the Kashmir issue to the UN was a mistake assumes that India could have forcibly liberated the princely state of Jammu and Kashmir (J&K) from the Pakistani invasion during 1947-48. At a point of time when the Indian (and Pakistani) Army was still commanded by British officers, it might not have been possible for India to forcibly get back the rest of J&K. The next best option at the time was indeed to go to the United Nations, which it did.

**Need for non-alignment**

In the early decades of its existence, India was a militarily weak, recently-decolonised state with an array of domestic political and security challenges, with limited resources, and as a result, attempts at carrying out major military campaigns would have been disastrous. And when faced with the whirlwind of the Cold War, it also, and rightly so, decided to be non-aligned. The policy of non-alignment was hardly woolly-headed; it was largely an exercise in realism. Not only that accommodation by a weak power is not weakness, India also benefitted from both the camps. Would becoming a camp follower have helped India against China in 1962? The answer might lie in the Pakistani experience in 1965 and 1971 despite being an alliance partner of the U.S. Unwilling to appreciate this complex early journey of a weak power is being a historical. Cut to the present. The Minister dwells at length on India's new appetite for risk-taking, and global positioning. He states that "not all risks are necessarily dramatic; many just require the confident calculations and determined follow up of day-to-day management but their aggregate impact can result in a quantum jump in global positioning. To a certain degree, we see that happening today." Does it mean that India's pre-2014 foreign policy lent it no global standing? Does it also mean that India's global standing, materially and reputationally, has dramatically increased post-2014 especially in the wake of the rather aggressive policies in Kashmir?

**Handling China**

More so, what has been the track record of the much-fabled strong-willed foreign policy of the Modi regime in dealing with China, easily

India's biggest strategic challenge today? Mr. Jaishankar's speech seems unsure on how to deal with it even as he offers a strong critique of the Nehru government's handling of China over six decades ago. Does his government have a China policy "today"? Is avoiding the tactical pressure from China (which can have electoral implications) via informal summits and slow peddling the Quad helpful in addressing the long-term China challenge? If indeed our past failures in dealing with China have reached us where we are today, how can being fixated with past mistakes help us frame a better China policy? The Minister's speech often lacks clarity about what it seeks to advocate. He rightly states, in the context of India not joining the Regional Comprehensive Economic Partnership (RCEP), that "economic autarky and import substitution" are old dogmas, then goes on to argue, that "embracing the new dogma of globalization without a cost-benefit analysis is equally dangerous". This is just smart phrasing, and one is unsure why India was unable to get a deal from the other partners especially China (despite the Chennai connect) and where India stands on the RCEP now and what are the long-term implications for the Indian economy of not joining it. Foreign policy of any regime, past or present, should be judged on the basis of concrete outcomes. Even as Mr. Jaishankar offers a spirited critique of the foreign policies of previous governments, his speech points towards very little concrete outcomes achieved by the Bharatiya Janata Party-led governments. He argues that "the balance sheet for India's foreign policy after seven decades presents a mixed picture". Notwithstanding the fact that the history of any country's foreign policy performance "presents a mixed picture", it would have been more useful if the incumbent External Affairs Minister were to clearly articulate the foreign and security policy successes of his government. 'Howdy Modi', 'Chennai Connect' and 'JAI' (Japan-America-India) are hardly spectacular outcomes. I am in agreement when he argues that dogmas can be problematic because "dogma treats every new approach as an unjustified deviation". However, are we to assume that broad themes and consistency in foreign and security policy are necessarily bad ideas? More so, how would the bold claims of a strong foreign and security policy sit well with strategic ambiguity, and

tactical and reactive posturing? Or is it that there is another foreign policy dogma in the making today — the so-called Modi doctrine? If so, is undoing past dogma seen as a first step towards promoting the new doctrine? Is that what Mr. Modi's External Affairs Minister has in mind when he says, "The world that awaits us not only calls for fresh thinking, but eventually, a new consensus at home as well. Putting dogmas behind us is a starting point for that journey"?

**Kashmir and Pakistan**

The biggest disappointment yet is Mr. Jaishankar's articulation of the Modi government's policy towards Kashmir, and Pakistan. He argues that the concerns of critics' about the internationalisation of Kashmir and hyphenation with Pakistan "is thinking from the past, reflecting neither the strength of India, the mood of the nation nor the determination of the Government". Put differently, he seems to argue that the Government's Kashmir policy is brilliant because India can militarily contain the situation in Kashmir, there is domestic widespread support for a militarised solution to Kashmir, and the government does not bother what the international community thinks about it. Not only does this assessment reek of foreign policy arrogance, it hardly sits well with a government that is acutely conscious of promoting the country's glory the world over. Let alone the fact that its Kashmir policy is proving to be a disaster.

## Nation

### Sabarimala issue explosive now

- The Supreme Court advocated patience to women of menstruating age fighting for their right to enter and worship at the Sabarimala temple in Kerala. The law was in their favour and any judicial order at this time may spark violence. The situation was already "explosive," the court said. Two women in their 30s recently approached the court with a plea to direct the police to provide them protection for their intended

pilgrimage to the famed forest temple in the ongoing season. They pointed out that a Constitution Bench lifted the ban on women of menstruating age to enter the temple in a majority judgment on September 28, 2018. The State's refusal to provide them protection was in gross contempt of the judgment, they argued. On November 14, a Bench of five judges, sitting in review of the judgment, referred the fundamental question of whether a woman's right to worship was subservient to age-old religious customs, faith and traditions, however unequal, to a seven-judge Bench. The Review Bench, however, did not stay the verdict allowing women in the 10 to 50 age to enter the temple. Senior advocates Indira Jaising and Colin Gonsalves, for Bindhu Ammini and Rehana Fathima, said the court's silence now would send a wrong message to the country. "We know the law and the law is in your favour. But the situation is very emotive, that is why this court thought it best to refer the issue to a larger Bench... Please be patient," Chief Justice of India (CJI) Sharad Arvind Bobde advised. But the lawyers insisted that there was no stay on the September 28 judgment. The CJI said, "Yes, there is no doubt. But equally without doubt is the fact that the issue has been referred to a larger Bench. I have not constituted that Bench... The situation today is as it existed for a 1,000 years. For balance of convenience, we will not pass any order today. If the case is finally decided in your [women's] favour, we will ensure that every woman goes to Sabarimala. We will jail anybody who will not comply with the law... The situation has become explosive. We do not want a situation now where violence erupts. So, yes, there is a judgment [September 28], but it is equally true that the issue has been referred." Chief Justice Bobde, indicating that any court would have agreed with what the lawyers were arguing for, said, "We know what you are saying is what any court would pass. But we are using our discretion here". When the lawyers asked if the two women could go ahead with their pilgrimage, Chief Justice Bobde said, "We are not passing any order stopping her. If she can happily go and pray at the temple, we are not stopping her. We are not passing any order..." "So Your Lordships are saying there is no stay on the Sabarimala judgment [allowing women of menstruating age entry]," Ms. Jaising asked the Bench. "We are not

saying anything. We have already said there is no stay," the CJI responded. The court said the review petitions in the Sabarimala case would be listed as soon as the seven-judge Bench gave its judgment. "I will be constituting the seven-judge Bench at the earliest," Chief Justice Bobde said.

## Strength in numbers

- The list of alarming numbers and figures relating to the depleting numbers in India's higher judiciary has a new addition. On December 10, the Supreme Court of India said that 213 names recommended for appointment to various High Courts are pending with the government. Data show that 38% of all sanctioned posts for High Court judges are lying vacant as of December 1, with the High Courts of some States including Andhra Pradesh and Rajasthan functioning at below half their actual capacity. The court has fixed a time period of six months to appoint as judges at least those whose names the Supreme Court collegium, the High Courts and the Government have agreed upon. At each level of the appointment process of judges to the higher judiciary, prior to the names reaching the Prime Minister and President for final approval, there are time periods specified. The Memorandum of Procedure states that appointments should be initiated at least six months before a vacancy arises and six weeks of time is then specified for the State to send the recommendation to the Union Law Minister, after which the brief is to be sent to the Supreme Court collegium in four weeks. Once the collegium clears the names, the Law Ministry has to put up the recommendation to the Prime Minister in three weeks who will in turn advise the President. Thereafter no time limit is prescribed and the process, seemingly, comes to a standstill. The Supreme Court's recommendation now of a time limit to these appointments is welcome. It is no secret perhaps, that the equation between the court and the Union Government has been strained by the former's decision to strike down as unconstitutional in 2015 the move to set up a National Judicial Appointments Commission which would have been responsible for appointments and transfers to the higher judiciary in place of the Supreme Court collegium. Since then, reports

of delays in appointments have become increasingly commonplace, with both sides testy over procedure. Last week, the same Bench of the Supreme Court chastised the government for not acting on another set of nominations on which the government had sent back objections. If the collegium reiterates the names, the court said, the government has no option but to appoint the judges. Such standoffs are now inevitable. As grievous as it is for the government to disrupt the process through delays, it is for the court to take an increasingly firm hand to ensure that the collegium system that it fought so hard to protect, despite flaws, actually functions effectively. Doing so would be in its best interests. Vacancies in the higher judiciary threaten every aspect of the justice delivery system and it is the courts, and very seldom the government, that always take the blame for any shortfall in justice.

In the name of a majority (Anupama Roy - teacher at the Centre for Political Studies, Jawaharlal Nehru University)

- The Citizenship (Amendment) Bill (CAB), passed in both Houses this week, promises to give the protection of citizenship to non-Muslims who fled to India to escape religious persecution in Pakistan, Bangladesh and Afghanistan. While religious persecution is a reasonable ground for protection, the problem with the CAB is that it does not include all communities that suffered religious persecution, and explicitly excludes Muslims who suffered persecution in the specified countries and other non-Muslim majority countries like Myanmar. This majoritarian notion of religion-based citizenship, although intrinsic to the Bharatiya Janata Party (BJP)'s idea of India, is not shared by the majority of people in this country. In addition, such a view is alien to the constitutional consensus which emerged in 1950, embodying the idea of a people who committed themselves — and those governing on their behalf — to a constitutional order. Those in support of the CAB have rallied around the argument that it is non-discriminatory and its objectives are justifiable. In doing so, they have often invoked the moral imperative of correcting a perceived past wrong — in this case the Partition. In the process, the CAB changes

completely the idea of equal and inclusive citizenship promised in the Constitution.

**Changes in citizenship law**

The CAB cannot, however, be seen in isolation. It must be seen in tandem with the National Register of Citizens (NRC) and other changes in the citizenship law, which have preceded it. The Home Minister and the Law Minister have clarified that the CAB and the NRC are distinct — the NRC protects the country against illegal migrants and the CAB protects refugees. This, however, is incommensurate with the election speeches made by BJP leaders. For instance, speaking in Kolkata earlier this year, Amit Shah had promised an NRC in West Bengal, but only after the passage of the CAB to ensure that no Hindu, Buddhist, Sikh, Jain and Christian refugee is denied citizenship for being an illegal immigrant. In a triumphal note after the passage of the CAB in Lok Sabha, Mr. Shah declared that a nationwide NRC would follow soon. Despite their seemingly disparate and adversarial political imperatives, the CAB and the NRC have become conjoined in their articulation of citizenship. Indeed, the two represent the tendency towards jus sanguinis in the citizenship law in India, which commenced in 1986, became definitive in 2003, and has reached its culmination in the contemporary moment. In 2003, the insertion of the category 'illegal migrants' in the provision of citizenship by birth became the hinge from which the NRC and the CAB later emerged. The Citizenship (Registration of Citizens and issue of National Identity Cards) Rules of 2003 made the registration of all citizens of India, issue of national identity cards, the maintenance of a national population register, and the establishment of an NRC by the Central government compulsory. Under these rules, the Registrar General of Citizen Registration is to collect particulars of individuals and families, including their citizenship status, through a 'house-to-house enumeration'. In an exception to the general rule, Assam has followed a different procedure of 'inviting applications' with particulars of each family and individual and their citizenship status based on the NRC 1951 and electoral rolls up to the midnight of March 24, 1971. The purpose of the NRC is to sift out 'foreigners' and 'illegal migrants', who were referred to at different

points as 'infiltrators' and 'aggressors', and a threat to the territory and people of India.

**Exempting minority groups**

The second strand emerging from the 2003 amendment has taken the form of the CAB, which exempts 'minority communities', Hindus, Sikhs, Buddhists, Jains, and Christians, from three countries — Bangladesh, Pakistan and Afghanistan — from the category of 'illegal migrants'. The CAB brings the citizenship law in line with exemptions already made in the Passport Act 1920 and Foreigners Act 1946 through executive orders in September 2015 and July 2016. It sets a cut-off date of December 31, 2014 as the date of eligibility of illegal migrants for exemption. It must be noted that a PIL filed by the Assam Sanmilita Mahasangha pending before the Supreme Court has contested the deviation in the cut-off date set for Assam by the Citizenship Amendment Act 1986, March 24, 1971, from the date specified in Article 6 of the Constitution, i.e., July 19, 1948, which applies to the rest of the country. The CAB is applicable to entire India, and takes the cut-off date forward by several years. The claim that the CAB does not violate the Constitution is reflective of the recommendations of the Joint Parliamentary Committee (JPC). The JPC was advised by constitutional experts to use a broader category, 'persecuted minorities', to protect the Bill from the charge of violating the right to equality in Article 14. The CAB uses the category 'minority communities' and goes on to identify them on the ground of religion. The notifications of September 2015 and July 2016, which changed the Passport and Foreigners Acts, had mentioned the term 'religious persecution'. The consideration of religious persecution for making a distinction among persons, the JPC argued, could not be discriminatory, because the distinction was both intelligible and reasonable — satisfying the standards laid down in the Supreme Court judgment in State of West Bengal vs. Anwar Ali Sarkarhabib (1952) to affirm adherence to Article 14.

**Test of reasonableness**

The JPC appears, however, to have overlooked the substantive conditions that the Supreme Court laid down in the same verdict. These require that the criteria of intelligibility of the differentia and the

reasonableness of classification, must satisfy both grounds of protection guaranteed by Article 14, i.e., protection against discrimination and protection against the arbitrary exercise of state power. In 2009, the Delhi High Court judgement in Naz Foundation vs. Government of NCT of Delhi referred to "a catena of decisions" to lay down a further test of reasonableness, requiring that the objective for such classification in any law must also be subjected to judicial scrutiny. The restraint on state arbitrariness, according to the judgment, was to come from constitutional morality, which as B.R. Ambdkar declared in the Constituent Assembly, was the responsibility of the state to protect. It remains a puzzle as to why the government wishes to change the citizenship law to address the problem of refugees. The JPC refers to standard operating procedures for addressing the concerns of refugees from neighbouring countries. In the case of refugees from the erstwhile West Pakistan who deposed before the JPC in favour of a CAB, the standard operating procedure was the grant of long-term visas leading to citizenship. One wonders how these refugees will benefit from a law which will put them through an arduous process of proving religious persecution. Immediately after Partition, 'displaced persons' constituted an administrative category, and citizenship files of 1950s tell us how district officials expedited their citizenship in the process of preparation of electoral rolls. The focus in the recent parliamentary debates, for various reasons, was the eastern borders. States in the region have resisted the CAB, and simultaneously asked for an NRC. West Bengal has been an exception. The reality of imposing a national order of things, through a CAB and an NRC, in non-national spaces will unfold in future but Assam has given us adequate evidence of the risks involved. It can only be hoped that the judiciary and civil society are able to restore constitutional and democratic politics through an exercise of counter-majoritarian power in a context where electoral gains have determined political choices.

A patently unconstitutional piece of legislation (Shadan Farasat - an advocate practising in the Supreme Court of India)

- How a country defines who can become its citizens defines what that country is, because citizenship is really the right to have rights. For India, the choice was inexplicably made in 1950 when the Constitution was adopted, and Part II (concerning citizenship) provided citizenship based on domicile in the territory of India. In fact, under Article 6 of the Constitution, migrants from Pakistani territory to Indian territory were also given citizenship rights. Religion was conspicuous in this constitutional scheme, in its absence. The Constitution also recognises the power of Parliament to make provisions with respect to "acquisition and termination of citizenship". Pursuant to this, Parliament had enacted the Citizenship Act, 1955; again, religion is not a relevant criteria under the 1955 Act. This position is now sought to be changed through the proposed Citizenship Amendment Bill, 2019 (CAB) that seeks to amend certain provisions of the 1955 Act. The obvious question on which much of the debate has so far focused on is whether in a country such as India, with a secular Constitution, certain religious groups can be preferred in acquisition of citizenship. Especially when secularism has been declared to be a basic feature of the Constitution in a multitude of judgments. But in addition to this basic question, a look at the proposed CAB shows that it is peppered with unconstitutionalities. The classification of countries and communities in the CAB is constitutionally suspect.

  **Country classification**

  First to the countries. The basis of clubbing Afghanistan, Pakistan and Bangladesh together and thereby excluding other (neighbouring) countries is unclear. A common history is not a ground as Afghanistan was never a part of British India and always a separate country. Being a neighbour, geographically, is no ground too as Afghanistan does not share an actual land border with India. More importantly, why have countries such as Nepal, Bhutan and Myanmar, which share a land border with India, been excluded? The reason stated in the 'Statement of Objects and Reasons' of the Bill is that these three countries constitutionally provide for a "state religion"; thus, the Bill is to protect

"religious minorities" in these theocratic states. This reason does not hold water. Why then is Bhutan, which is a neighbour and constitutionally a religious state — the official religion being Vajrayana Buddhism — excluded from the list? In fact, Christians in Bhutan can only pray privately inside their homes. Many Bhutanese Christians in the border areas travel to India to pray in a church. Yet, they are not beneficiaries under CAB. Further, if religious persecution of "religious minorities" in the neighbourhood is the concern, then why has Sri Lanka, which is Buddhist majority and has a history where Tamil Hindus have been persecuted, been excluded? Why is also Myanmar, which has conducted a genocide against Muslim Rohingyas, many of who have been forced to take refuge in India, not been included? The CAB selection of only these three countries is manifestly arbitrary.

**Focus on certain groups**

On the classification of individuals, the Bill provides benefits to sufferers of only one kind of persecution, i.e. religious persecution. This itself is a suspect category. Undoubtedly, the world abounds in religious persecution but it abounds equally, if not more, in political persecution. If the intent is to protect victims of persecution, there is no logic to restrict it only to religious persecution. Further, the assumption that religious persecution does not operate against co-religionists is also false. Taslima Nasreen of Bangladesh is a case in point. She or similarly placed persons will not get the benefit of the proposed amendment, even though she may have personally faced more religious persecution than many Bangladeshi Hindus. Similarly, Shias in Pakistan, a different sect of the same religion, also face severe persecution in Pakistan. The fact that atheists are missing from the list of beneficiaries is shocking. Restricting the benefits of "religious minority" to six religious groups (Hindus, Sikhs, Buddhists, Jains, Parsis and Christians) is equally questionable. Ahmadiyas in Pakistan are not recognised as Muslims there and are treated as belonging to a separate religion. In fact, because they are seen as a religion that has tried to change the meaning of Islam, they are more persecuted than even Christians or Hindus. If the avowed objective of CAB is to grant citizenship to migrants on the basis of religious persecution in their

country of origin, the absence of Ahmadiyas from the list makes things clear. Article 14 of the Constitution of India, prevents the State from denying any "person" (as opposed to citizen) "equality before the law" or "equal protection of the laws" within the territory of India. From the serious incongruities of CAB, as explained above, it is not difficult to imagine, how it will not just deny equal protection of laws to similarly placed persons who come to India as "illegal migrants" but in fact grant citizenship to the less deserving at the cost of the more deserving. How else does one explain how a Rohingya who has saved himself from harm in Myanmar by crossing into India will not be entitled to be considered for citizenship, while a Hindu from Bangladesh, who is primarily an economic migrant and who may not have not faced any direct persecution in his life, will be entitled to be considered apparently on the ground of religious persecution? Similarly, why a Tamil from Jaffna who took a boat to escape the atrocities in Sri Lanka will continue be an "illegal migrant" and never be entitled to apply for citizenship by naturalisation? It is not difficult to imagine many other examples of this kind that reveal the manifestly arbitrary nature of CAB. There is also the reduction in the residential requirement for naturalisation — from 11 years to five. It is almost as if CAB in its provisions and impact is trying to give definitional illustrations of the word "arbitrary". CAB is devoid of any constitutional logic, as explained above. But it does have a sinister political logic. By prioritising Hindus in matters of citizenship as per law, it seeks to make India a Hindu homeland, and is the first de jure attempt to make India a Hindu Rashtra. If India is to stay a country for Indians and not for Hindu Afghans, Hindu Pakistanis and Hindu Bangladeshis and eventually for Hindu Russians, Hindu Americans, CAB should not be passed in Parliament. If it is, the judiciary must call it out for what it is — a patently unconstitutional piece of legislation. Else, make no mistake, it is only the beginning and not the end of similar legal moves, which, with time, will bring an end to the Constitution as we know it.

- "With India for their basis of operation, for their Fatherland and for their Holyland... bound together by ties of a common blood and common culture (Hindus) can dictate their terms to the whole world."

These words scratched by V.D. Savarkar on the walls of a prison, and published in 1923 as a book that defined Hindutva, are roughly 100 years old. Political boundaries are artificial and imagined barriers to human movement. Most violence in the modern history of humankind emanated from attempts to enforce boundaries that purportedly protect citizens and eject aliens. The Holocaust and the Palestinian dispossession are two egregious examples. Ascribing, and claiming legitimacy for a particular community-territory link is a political project, and Savarkar did this with remarkable clarity. During the Second World War, he exhorted Hindus to join the British Army, not to fight fascism, but to prepare for the civil war with Muslims that he thought was inevitable. Muslims and Christians could never be loyal citizens, he argued. He wrote, "The tie of a common Holyland has at times proven stronger than the claims of a Motherland... Look at the Mohammedans. Mecca to them is a sterner reality than Delhi or Agra." The idea that nation is not territorial, but cultural, was the core of Savarkar's treatise. Though the notion of a Holyland is emphasised, it is only "a basis of operation" to dictate terms to the rest of the world. Not all those who are residents are a part of the nation, and not all outside the territory are outside the nation. India's founding fathers and public opinion overwhelmingly rejected this notion at the time of Independence, but an Islamic mirror image of it was born into reality as Pakistan.

**Rooted and true**

Though a group of sedate political experts were hallucinating a delink between Narendra Modi and Hindutva in 2014, he was clear in his promises and has been true to them in government. The non-territorial notion of citizenship and nationhood, the core of Hindutva, was reiterated in the 2014 manifesto of the Bharatiya Janata Party, foretelling the amendment to the Citizenship Act, which was passed by the Lok Sabha on December 9. "India shall remain a natural home for persecuted Hindus and they shall be welcome to seek refuge here," the manifesto said. "The NRIs [Non-Resident Indians], PIOs [Person of Indian origin] and professionals settled abroad are a vast reservoir to articulate the national interests and affairs globally. This resource will

be harnessed for strengthening Brand India," the manifesto foretold Mr. Modi's diaspora politics. Talking to the Indian diaspora in London on November 13, 2015, Mr. Modi said: "Our relations are based on the ties of our blood, not on the colour of our passports. All the rights of Narendra Modi has, you do too..." While the Citizenship (Amendment) Bill 2019 (CAB) seeks to enact as law the notion of India as the home for all Hindus anywhere, the National Register of Citizens (NRC) seeks to weed out those who are already in the territory but are not part of the nation, as per Savarkar's doctrine, echoed in numerous resolutions and statements of the BJP and its forebear, the Jan Sangh. For a non-Muslim excluded from the NRC, there could be a route to citizenship once CAB is law. This distinction between "infiltrators" and "refugees" that Home Minister Amit Shah made during the debate on CAB in the Lok Sabha was made by Mr. Modi during the 2014 campaign. As Mr. Shah told Parliament, nobody can complain of being blindsided by the government on CAB — it was part of the BJP's agenda on which it sought a mandate in 2014 and 2019.

**The outlines**

If Muslims were not legitimate citizens of the nation, where would they go? While he would not accept them as part of the Hindu nation, Savarkar would also not concede to the demand for a separate country for them and he fiercely opposed the demand for Pakistan. It was left to M.S. Golwalkar of the Rashtriya Swayamsevak Sangh, with whom Savarkar had a hostile relationship, to spell out clearly what non-Hindus were supposed to do. They "... may stay in the country, wholly subordinated to the Hindu Nation, claiming nothing, deserving no privileges, far less any preferential treatment — not even citizen's rights." When India debates what happens to those who will not be able to prove their citizenship under the NRC, and are unable to seek citizenship under CAB, this is the future envisaged for them in the Hindutva notion. This understanding of nationhood and citizenship is reflected in the government's move to end the special constitutional status of Jammu and Kashmir, and demote and divide the region into two Union Territories. Kashmiris, far from aspiring for autonomy and enjoying special protection of their cultural identity, are now reduced

to seeking the restoration of basic citizenship rights and statehood; as and when they are allowed to speak, that is. Far from holding a veto on Indian politics as the BJP had accused them of for decades, Muslims would be seeking to restore their voting rights, if unable to meet the onerous requirement to be listed in the NRC. The shallowness and duplicity of the government's claim that the scrapping of the special status of J&K was about uncompromising uniformity of laws across the country stands exposed in CAB, that continues to provide special protection to the cultural rights of several communities. Mr. Shah also made the reassurance during the debate that Article 371 which protects the cultural integrity of many regions, would "never be altered". So, it is not a matter of principle for the government that no community shall be granted special cultural rights; it is only that Muslims will not be allowed that.

**The U.S. and a parallel**

The ongoing attempts in India to remake itself have striking parallels in the political project of U.S. President Donald Trump. In January 2017, soon after taking over, Mr. Trump ordered a religious test for admission to the U.S. Through an executive order he banned travellers from seven Muslim-majority countries from entry. The order also a had a provision, echoing the Modi government's CAB, which was then pending in Parliament. The President ordered to "prioritize refugee claims made by individuals on the basis of religious-based persecution, provided that the religion of the individual is a minority religion in the individual's country of nationality". This would have excluded Muslims from Muslim-majority countries — the exact intent of the CAB. The American judiciary stalled the implementation of the order, and a third version of the travel ban that was finally upheld by the U.S. Supreme Court in June 2018 did not have the above provision. Two non-Muslim countries were included in the amended list of countries from where travellers are banned. The U.S. Supreme Court upheld the principle that there cannot be a bar on entry based on religious categories, though it allowed the third iteration of the Presidential order to stand. Justice Sonia Sotomayor, speaking for the minority in the 5-4 judgment said the Presidential order — even the revised one — was discriminatory and

unconstitutional. She held that a "reasonable observer" would view the executive action "as motivated by animus against Muslims", and termed the majority decision as a repetition of the past mistake of upholding the Japanese American internment camps in 1944. During the Second World War, when Savarkar was recruiting future soldiers to deal with the internal enemies, Franklin D. Roosevelt, hailed as a progressive President, was ordering the internment of thousands of American citizens of Japanese origin. That past appears to be returning, not as a haunting nightmare as it should be, but heralded as the promised glorious future. What makes Hindu majoritarianism more effective is its doctrinaire legacy, supported by texts and enforced by a quasi-military cadre.

- An advisory issued by the Information and Broadcasting Ministry to television channels, asking them to ensure that nothing that incites violence is telecast, has been objected to by the Opposition. The advisory, coming in the wake of the violence in Assam against the Citizenship (Amendment) Bill, does not refer to it or to the protests. Signed by Ministry Director Amit Katoch, it states that from time to time, the Ministry had issued advisories asking the channels to adhere to the Programme and Advertising Codes as prescribed in the Cable Television Networks (Regulation) Act, 1995. It asks channels to be cautious about any content which "is likely to encourage or incite violence or contains anything against maintenance of law and order or which promotes anti-national attitudes or contains anything affecting the integrity of the nation". Trinamool Congress leader in the Rajya Sabha Derek O' Brien equated it with the 1975 Emergency. "Information and Broadcasting Ministry advisory to TV channels tantamount to media censorship. Stop intimidating the media. A second emergency," he said in a tweet. Congress leader Pranav Jha said in a tweet, "By issuing this advisory, is the Government actually ordering the Media to not show protests against the #CAB? After internet ban, this is Media ban. Repression at any cost. Condemnable to say the least".

SC, ST quota in Parliament extended

- Parliament passed a Constitutional amendment giving a 10-year extension to reservations for Scheduled Castes and Scheduled Tribes in the Lok Sabha and the State Assemblies and ending the provision for nomination of two Anglo-Indians. The Constitution (One Hundred and Twenty-Sixth Amendment) Bill, 2019, was passed unanimously by the Rajya Sabha, two days after it was passed by the Lok Sabha. All 163 members present voted to pass the amendment, after a heated exchange between the ruling party and the Opposition. While the Congress and Trinamool MPs staged a walkout during Law Minister Ravi Shankar Prasad's reply, they returned in time to vote. The Bill extended the reservation for SCs and STs in the Lok Sabha and State Assemblies, which was due to end on January 25, 2020, for 10 years, the seventh such 10-year extension given since the Constitution was enacted in 1950. However, the Bill also ended the provision for nomination of Anglo-Indians to.

What Nanavati panel found

- The Gujarat government tabled in the Assembly the report of the Nanavati Commission, which it had appointed to probe the burning of the Sabarmati Express in 2002 and the subsequent riots in the state. It gave a clean chit to then Chief Minister Narendra Modi, as well as to police, the BJP, the Vishwa Hindu Parishad and the Bajrang Dal.

  **What is the Nanavati Commission?**

  It was set up in 2002 following the burning of the Sabarmati Express near Godhra station on February 27, 2002, in which 59 died. Initially a one-judge Commission headed by Justice K G Shah, it was later expanded to be headed by retired Justice G T Nanavati. Following Shah's death in 2008, Justice Akshay Mehta was appointed in his place. Justice Mehta was the presiding judge when Babu Bajrangi, prime accused in the cases of violence in Naroda in Ahmedabad, got bail. The Commission inquired into events leading to the Sabarmati Express incident, and subsequent incidents of violence in the state in which nearly 1,200 persons had been killed (including the 59 in the train carnage); the inadequacy of administrative measures taken to prevent

and deal with disturbances; and whether the incident in Godhra was pre-planned and whether information was available with agencies to prevent it; and to recommend measures to prevent such incidents in the future. In 2004, its scope was expanded to include inquiry into the role and conduct of Modi and/or any other minister(s), police officers, other individuals and organisations. The Commission got 24 extensions until it submitted the final report in 2014.

**Why did it take five years to table it?**

The final report was submitted in 2014 to then Chief Minister Anandiben Patel, months after Modi became Prime Minister. Minister of State for Home Pradeepsinh Jadeja, explaining why it took the government five years to table the report, said it was "voluminous and we needed to study every aspect before putting it out in public". Retired DGP R B Sreekumar, one of the witnesses before the Commission, had gone to the Gujarat High Court with a public interest litigation seeking its tabling. The Gujarat government told the court in September that it would table in the upcoming (now ongoing) Assembly session.

**Why is called the final report?**

The first report, containing a single volume dealing with the inquiry into the burning of the coaches, was tabled in the Assembly in 2008. That too gave a clean chit to Modi, his council of ministers and police officers. It concluded that the train burning was "pre-planned act" and done to "cause harm to the kar sevaks travelling in that coach".

**What does the final report cover?**

The final report, which is of nine volumes across 2,500 pages, again gave Modi and his council of ministers a clean chit. The commission trashed evidence provided by former IPS officers retired DGP Sreekumar, Rahul Sharma and Sanjiv Bhatt, that alleged complicity on the part of the government and its functionaries. It has also cleared former ministers the late Haren Pandya and Ashok Bhatt, and Bharat Barot. The commission deemed false the evidence provided against the then Minister of State for Home Gordhan Zadaphia. Following the findings, MoS (Home) Jadeja said the government would initiate departmental proceedings against the three former police officers. The

report deals with North, South, Central Gujarat, and Saurashtra and Kutch in dedicated volumes. One volume is dedicated to Vadodara City and two to Ahmedabad City and district, the urban centres that saw the highest number of casualties in the cases of Best Bakery, Naroda Patiya, Naroda Gam and Gulberg Society, which were among the nine cases being investigated and tried under the supervision of the Supreme Court.

**What are the key findings?**

The Commission found that there was no conspiracy involved in the riots and they were largely the outcome of the anger over the Godhra train burning incident. The Commission considered testimonies provided to counter the evidence and testimonies provided by NGOs and rights groups like Teesta Setalvad of Citizens for Justice and Peace, and Jan Sangharsh Manch led by the late Mukul Sinha, who is credited with leading the cross-examinations of government officials and political functionaries.

**What are its findings about Modi?**

It quoted Modi as having told it that he was being "kept informed about the incident (when it) started happening on 27.2.002 and from 28.2.2002 by the senior officers heading their respective departments. The senior officers heading their respective departments were also keeping me posted with the steps taken by them to control the sudden violent situation erupted in the aftermath of Godhra train burning incident with the effective aid and assistance of all forces including para military forces and military which the state agencies had deployed immediately".

**What did it say about ministers, police and various organisations?**

It concluded that "there is no incident to show that either BJP, VHP or any other political party or its leaders or any religious organisations or their leaders had instigated attacks on Muslims. Only in two cases it was alleged that VHP persons had taken part in those incidents... The incidents against Muslims appear to have happened because of the anger of the people on account of the Godhra incident... Anti-social elements appear to have taken part in some incidents." It said a number of affidavits were filed stating that the police had taken

prompt and effective steps to curb violence and had saved lives and properties. The Commission said it found no evidence to show there was any inaction or negligence on the part of police in maintaining law and order in the district, or to show involvement of any Minister of the State Government in the incidents or any interference by a Minister in the functioning of the police.

**What are the key recommendations?**

One is that "reasonable restriction be placed upon the media in matter of publication of reports about the incidents (during communal riots)". The Commission cited testimonies accusing media of giving "wide publicity to the Godhra incident and the incidents that happened thereafter people got excited and indulged in communal violence". It also found "deep rooted hatred between some sections of Hindu and Muslim communities" as one of the causes of communal riots and recommends government to take steps for removing this "weakness" from society. It cited instances to show that Hindus, in fact, were either assaulted for helping Muslims or alerted Muslims about possible attacks.

## How Data Protection Bill compares with its EU counterpart

- The Personal Data Protection (PDP) Bill, 2019, introduced in Lok Sabha this week, has been referred to a joint select committee. It has significant parallels to the European Union's General Data Protection Regulation (GDPR). These two overarching data regulations mirror each other in some ways, but also present some notable divergences.

  **Where they differ**

  **Data transfer abroad:** One significant difference between the GDPR and the PDP Bill is the framework built around deciding whether or not data can leave the country. Both give a government authority the power to decide if data transfers can occur, but the GDPR more clearly lays out the parameters of this decision. Their "adequacy decision" is made based on the country's rule of law, authorities, and other international commitments. The transfer can be made without this decision if there are legally binding rules or other codes of conduct that allow for it. The PDP simply states that the Authority has to have

approval of the transfer of any sensitive personal data abroad, without specifying as many details about the other country's "adequacy" in receiving the data.

**Automated decisions:** The GDPR much more directly addresses personal harm from automated decision-making. The PDP Bill requires an assessment in cases of large-scale profiling, but does not give the citizen the right to object to profiling, except in the cases of children. This decision making includes, for example, a corporation deciding your credit score as well as profiling an individual to target them with advertising that has now become the bedrock of the data economy. The GDPR states: "Where personal data are processed for the purposes of direct marketing, the data subject should have the right to object to such processing, including profiling to the extent that it is related to such direct marketing, whether with regard to initial or further processing, at any time and free of charge. That right should be explicitly brought to the attention of the data subject and presented clearly and separately from any other information."

**Personal data types:** To give special attention to particularly important types of data, India's PDP Bill categorises personal data much more explicitly. In the Indian Bill, a sub-category of personal data called sensitive personal data has a pre-determined list including health, financial, caste, and biometric data. It resembles the list of "special categories" in the GDPR, but the GDPR does not have separate localisation rules for this type of data. The PDP Bill, on the other hand, does not allow for sensitive personal data to be stored abroad and can only be processed abroad with authority approval. In addition, the PDP Bill categorises "critical personal data" as an open-ended category in which government can define from time to time. Critical personal data can never leave the country, for storage or processing, according to the PDP. The PDP Bill, unlike the draft Bill, has allowed the Government of India to direct any entity handling data to provide them with "non-personal data", or anonymised data. The GDPR, on the other hand, states: "This Regulation does not therefore concern the processing of such anonymous information, including for statistical or research purpose"."

**Supervision & data handling:** The GDPR Bill also gives wide-ranging discretion to "supervisory authorities" created in each of the 'US's member states to oversee this topic. Aspects of the Bill, such as penalties, are left up to these authorities.

**Where they are alike**

**Exceptions:** The exceptions given to the Indian Bill and the EU Regulation look similar. Both allow data processing for prevention, investigation, detection, or prosecution of criminal offences. Both also discuss "public security", "defence", and "judicial" proceedings. The GDPR states: "This Regulation does not apply to issues of protection of fundamental rights and freedoms or the free flow of personal data related to activities which fall outside the scope of Union law, such as activities concerning national security. This Regulation does not apply to the processing of personal data by the Member States when carrying out activities in relation to the common foreign and security policy of the Union."

**Consent:** The PDP Bill and the GDPR are founded upon the concept of consent. In other words, data processing should be allowed when the individual allows it. Consent carries similar meanings, with words like "free", "specific", and "informed". "Reasonable expectations" are also a parameter for processing, as are limiting the collection and purposes for collection. They also both given special protection to children's lack of ability to give consent.

**Individual's rights:** Both have similar rights given to the individual, including the right to correction, the right to data portability (transferring your data to another entity), and the right to be forgotten (the right to erase the disclosure of your data). But, as mentioned above, the right to object to profiling is in the GDPR and not the PDP Bill.

**Other similarities:** Both place responsibility on the fiduciaries, such as building products that include privacy by their design and transparency about their data-related matters. The European Data Protection Board in the GDPR and the Data Protection Authority in the PDP Bill have some similar duties, such as dispute resolution and codes of conduct.

Sowing a new Seeds regime

- **The existing 1966 law already provides for regulation of the quality of seeds. What does the new Bill seek to change?**

  The current Act only covers "notified kinds or varieties of seeds". Thus, regulation of quality, too, is limited to the seeds of varieties that have been officially notified. Such varieties would be mostly those that are bred by public sector institutions — the likes of the Indian Council of Agricultural Research (ICAR) and the state agricultural universities (SAUs) — and officially "released" for cultivation after multi-location trials, over three years or more, to evaluate their yield performance, disease and pest resistance, quality, and other desired traits. Release is a precondition for notification. And the provisions of The Seeds Act, 1966, apply only to certified seeds produced of notified varieties. The new Seeds Bill, 2019 provides for compulsory registration of "any kind or variety of seeds" that are sought to be sold. According to Section 14 of the draft Bill, "no seed of any kind or variety… shall, for the purpose of sowing or planting by any person, be sold unless such kind or variety is registered". In other words, even hybrids/varieties of private companies will need to be registered, and their seeds would have to meet the minimum prescribed standards relating to germination, physical and genetic purity, etc. Breeders would be required to disclose the "expected performance" of their registered varieties "under given conditions". If the seed of such registered kind or variety "fails to provide the expected performance under such given conditions", the farmer "may claim compensation from the producer, dealer, distributor or vendor under The Consumer Protection Act, 1986".

  **What is the context for bringing the Bill?**

  The 1966 legislation was enacted at the time of the Green Revolution, when the country hardly had any private seed industry. The high-yielding wheat and paddy varieties, which made India self-reliant in cereals by the 1980s, were developed by the various ICAR institutes and SAUs. These public sector institutions have retained their dominance in breeding of wheat, paddy (including basmati), sugarcane, pulses, soyabean, groundnut, mustard, potato, onion and other crops, where farmers largely grow open-pollinated varieties (OPV) whose grain can

be saved as seed for re-planting. Over the last three decades or more, however, private companies and multinationals have made significant inroads, particularly into crops that are amenable to hybridisation (their seeds are first-generation hybrids produced by crossing two genetically diverse plants, and whose yields tend to be higher than that of either of the parents; the grains from these, even if saved as re-used as seed, will not give the same "F1" vigour). Today, the size of the private hybrid seeds industry is estimated at about Rs 15,000 crore. That includes cotton (Rs 4,000 crore), vegetables (Rs 3,500 crore), corn/maize (Rs 1,500 crore), paddy (Rs 1,000 crore), pearl millet/bajra (Rs 300 crore) and sorghum/jowar (Rs 200 crore). Hybrid seed adoption rates are reported to be 7-8% in paddy, 60-70% in corn, 90% in jowar and bajra, 95% in cotton, and 80%-plus in major vegetables such as okra, tomato, chilli, capsicum, cauliflower, gourds, cucumber, cabbage, melons, brinjal, carrot and radish. Even in banana, the real production increase after the 1990s has come from tissue-culture micro-propagation planting technology commercialised by private players like Jain Irrigation.

**So, are privately-bred hybrids not covered under any regulation?**

The current Seeds Act, as already noted, applies only to notified varieties. Also, unless a variety or hybrid is notified, its seeds cannot be certified. Most of the private hybrids marketed in India, by virtue of not being officially "released", are neither "notified" nor "certified". Instead, they are "truthful labelled". The companies selling them simply state that the seeds inside the packets have a minimum germination (if 100 are sown, at least 75-80, say, will produce plants), genetic purity (percentage of "true-to-type" plants and non-contamination by genetic material of other varieties/species), and physical purity (proportion of non-contamination by other crop/weed seeds or inert matter).

**How does the proposed Seeds Bill, 2019 address the above lacuna?**

It does away with the concept of "notified" variety. By providing for compulsory registration of "any kind or variety of seeds", private hybrids — whether officially "released" or "truthful labelled" — will automatically be brought under regulatory purview. It must be

mentioned here that the Seeds (Control) Amendment Order of 2006 under the Essential Commodities Act mandates dealers to ensure minimum standards of germination, purity, and other quality parameters even in respect of "other than notified kind or variety of seeds". Enforcing mandatory registration under a new Seed Act, encompassing all varieties and hybrids, is expected to bring greater accountability from the industry, even while rendering the Seeds Control Order redundant.

**How has been the private seed industry responded to the proposed Bill?**

Seed companies have welcomed the provision of compulsory registration of all varieties/hybrids, based on the results of multi-location trials for a prescribed period to establish their performance vis-à-vis the claims of the breeders concerned. This should help minimise the risk of farmers being sold seeds of low-quality genetics, especially by fly-by-night operators taking undue advantage of the "truthful labelling" and "self-certification" processes. The industry, however, wants the process of registration to be time-bound. Given the lack of manpower and infrastructure within the government system, the registration may be granted or refused on the basis of multi-location trials carried out by the breeder/applicant itself. But the industry's main reservation is the provision for regulation of sale price "in emergent situations like scarcity of seeds, abnormal rise in prices, monopolistic pricing or profiteering". The fact that this power of fixing sale price of seed has been given both to the Centre and state governments has added to their nervousness. Their contention is that seed accounts for not even a tenth of the total operational costs in most crops, despite the genetic information contained in it being the main determinant of grain yield and quality.

**When is the Bill likely to become law?**

Despite the buzz, the chances of it being introduced in the current session of Parliament are remote — it is not listed in the legislative business expected to be taken up. Incidentally, an earlier version of the Bill had lapsed after being introduced in 2004.

Not many lessons learnt from water planning failures (J. Harsha - Director, Central Water Commission)

- Following the massive water crisis across India in the summer of 2019, the Central government hurriedly launched the Jal Shakti Abhiyan (JSA), a time-bound, mission-mode water conservation campaign to be carried out in two phases, across the 255 districts having critical and over-exploited groundwater levels. This campaign, however, was not intended to be a funding programme and did not create any new intervention on its own. It only aimed to make water conservation a 'people's movement' through ongoing schemes like the MGNREGA and other government programmes. The JSA is partly modelled and driven by some sporadic success stories such as NGO Tarun Bharat Sangh's experiment in Alwar, Rajasthan and Anna Hazare-led efforts in Ralegan Siddhi, Maharashtra. These projects primarily involved building tanks and ponds to capture rainwater and building recharge wells to recharge groundwater. However, it is unclear whether they were based on reference to watershed management or groundwater prospect maps.

  **Planning scientifically**

  Water planning should be based on hydrological units, namely river basins. And, political and administrative boundaries of districts rarely coincide with the hydrological boundaries or aquifer boundaries. However, contrary to this principle of water management, JSA was planned based on the boundary of the districts, and to be carried out under the overall supervision of a bureaucrat. This resulted in the division of basins/aquifers into multiple units that followed multiple policies. There was no data on basin-wise rainfall, no analysis of run-off and groundwater maps were rarely used. As a result, one never came to know whether water harvested in a pond in a district was at the cost of water in adjoining districts. The JSA also fundamentally ignored the fact that most of India's water-stressed basins, particularly those in the peninsular regions, are facing closure, with the demand exceeding supply. Hence, groundwater recharge happened at the cost of surface water and vice versa. This is where an absence of autonomous and knowledge-intensive river-basin organisations is acutely felt. As on date, the JSA's portal displays impressive data,

images and statistics. For example, it claims that there are around 10 million ongoing and completed water conservation structures; 7.6 million recharge structures. The website also says that one billion saplings have been planted and that six million people participated in awareness campaigns. But, data and statistics can deceive or lie, as claimed by journalist Darrel Huff in his 1954 book How to Lie with Statistics. For example, the data displayed on JSA portal do not speak anything about the pre-JSA water levels, the monthly water levels and impact of monsoon on the water levels across the 255 districts with critical and over-exploited blocks. They also don't convey anything about the quality of the structures, their maintenance and sustainability. Even if the water levels had been measured, it is unknown whether the measurement was accurate. Many such queries remain unanswered and hidden behind these data and statistics. The results for a 2016 study conducted by the Central Groundwater Board showed that water levels always increase post-monsoon. Therefore, it will require long-term monitoring of water level data to determine the actual impact of a measure like JSA. At present, there is no such parameter to measure the outcome of such a mission-mode campaign. The rat race among districts for ranking has turned out to be meaningless.

**Facile assumptions**

True, the aim and intent of JSA are noble. But the assumptions are distorted. For example, it assumes that common people in rural areas are ignorant and prone to wasting water; on the contrary, they are the ones who first bear the brunt of any water crisis. The per capita water allocation to those living in rural areas is 55 litres, whereas the same for urban areas like Delhi and Bengaluru is 135-150 litres. Therefore, the JSA's move to reach out to poor people and farmers, asking them to 'save water', appears hypocritical, particularly when district administrations blatantly allow the sewage generated from towns and cities to pollute village water sources such as tanks, ponds and wells. Moreover, it is difficult to say whether measures like JSA can provide long-term solutions. Most of the farm bunds built with soil can collapse within one monsoon season due to rains and/or trespassing by farm

vehicles, animals and humans. Further, there are issues like lack of proper engineering supervision of these structures, involvement of multiple departments with less or no coordination, and limited funding under MGNERGA and other schemes. Finally, there have hardly been many efforts undertaken to dissuade farmers from growing water-intensive crops such as paddy, sugarcane, and banana, when it is widely known that agriculture consumes 80% of freshwater. The summer water crisis has not led to our policymakers learning many lessons, and the country just seems to have returned to a business-as-usual situation.

## No pot luck for youth who grew cannabis at home

- Growing weed at home and sourcing narcotics via the dark web has landed some youth in Bengaluru in trouble. Police discovered that they had turned their flat into an indoor site to cultivate cannabis, using pots kept under LED lights. A business management student from Bihar studying in the city procured narcotics from the Netherlands through the dark web and sold it here. He also allegedly grew 'hydro' ganja (cannabis) in his flat in Kengeri, on the western outskirts of the city. Police who raided the flat on Thursday arrested 23-year-old Amatya Rishi, along with two of his associates, one of whom is a student from the same college. They allegedly recovered ₹20 lakh worth of 225 LSD slips (stamps) and 2 kg of ganja. The police said this was the second such ring they had busted recently. It was the college authorities who tipped off the police. When the police raided the flat, they found two rooms fitted with LED lights. "Ganja plants were being grown in small pots using coco-peat," a senior official said. The police also recovered ganja seeds and 225 LSD slips, which Rishi had allegedly procured from the Netherlands through a dark web site named 'Empire Market'. "It was delivered via courier. A probe pointed to the involvement of another student from the same college, Aditya Kumar, 21, from Bengaluru; and one Mangal Mukhiya, 30, an acquaintance of Amatya Rishi from Bihar," police said. Two students from Kolkata were arrested in the last week of November and narcotics worth ₹1 crore, allegedly procured from Canada, were seized. "In both cases, tech-savvy students

were running peddling operations. Bitcoins were the currency," said Sandeep Patil, Joint Commissioner (Crime), Bengaluru. "This is a new challenge. Those procuring narcotics do not know the identity of the supplier. Moreover, these are not large multi-nodal networks but short chains. Busting a ring only affects that chain," he added. The Bengaluru police have asked Customs officials at Kempegowda International Airport to ensure parcels containing narcotics and banned substances do not pass through.

## Heavy metals contaminating India's rivers

- Samples taken from two-thirds of the water quality stations spanning India's major rivers showed contamination by one or more heavy metals, exceeding safe limits set by the Bureau of Indian Standards. The findings are part of a report, which is the third edition of an exercise conducted by the Central Water Commission (CWC) from May 2014 to April 2018. Samples from only one-third of water quality stations were safe. The rest, or 287 (65%) of the 442 sampled, were polluted by heavy metals. Samples from 101 stations had contamination by two metals, six stations saw contamination by three metals. Iron emerged as the most common contaminant with 156 of the sampled sites registering levels of the metal above safe limits. None of the sites registered arsenic levels above the safe limit. The presence of metals in drinking water is to some extent unavoidable and certain metals, in trace amounts, required for good health. However, when present above safe limits, they are associated with a range of disorders. Long-term exposure to the above-mentioned heavy metals may result in slowly progressing physical, muscular, and neurological degenerative processes that mimic Alzheimer's disease, Parkinson's disease, muscular dystrophy and multiple sclerosis.

  **Heavy metals contaminating India's rivers**

  The other major contaminants found in the samples were lead, nickel, chromium, cadmium and copper. The study spanned 67 rivers in 20 river basins. Lead, cadmium, nickel, chromium and copper contamination were more common in non-monsoon periods while iron, lead, chromium and copper exceeded 'tolerance limits' in monsoon periods

most of the time. "Arsenic and zinc are the two toxic metals whose concentration was always obtained within the limits throughout the study period," the report noted. Arsenic contamination is a major environmental issue that affects groundwater. However, the CWC exercise was restricted to surface water. Not all the rivers are equally sampled. Several rivers have only been sampled at a single site whereas others such as the Ganga, the Yamuna and the Godavari are sampled at multiple sites. Marked variation was found in contamination levels depending on the season. For instance, iron contamination was persistent through most of the Ganga during monsoon but dipped significantly during the non-monsoon periods. Samples were collected in three different seasons: pre-monsoon (June 2012), monsoon (September 2011, October 2012 and August 2013) and post-monsoon (February 2012 and March 2013). The main sources of heavy metal pollution are mining, milling, plating and surface finishing industries that discharge a variety of toxic metals into the environment. "Over the last few decades, the concentration of these heavy metals in river water and sediments has increased rapidly," the report noted, while recommending more intensive monitoring. The reasons for contamination, according to the authors of the report, were "population growth and rise in agricultural and industrial activities".

Pollution can be linked to mortality

- Union Environment Minister Prakash Javadekar said last week that no Indian studies have shown a "direct correlation" between pollution and mortality. International studies estimating that thousands have died from causes linked to air pollution have caused a "fear psychosis among people" when the situation is actually not so bad, Mr. Javadekar said.

  **Why are his comments untenable?**

  Last year, the India State-Level Disease Burden Initiative (ISLDBI), which consists of at least 100 health professionals, reported that one in eight deaths in India were attributable to air pollution and that "...the average life expectancy in India would have been 1.7 years higher if the air pollution levels were less than the minimal level causing

health loss." ISLDBI studies are funded by the Union Health Ministry and involve the Public Health Foundation of India, the Indian Council of Medical Research, and the Institute for Health Metrics and Evaluation. These studies were part of the Global Burden of Disease Study 2017 and were published in the peer-reviewed journal, The Lancet Planetary Health.

**How is mortality from air pollution calculated?**

Researchers overwhelmingly rely on modelling. Epidemiologists and public health professionals routinely rely on correlation to draw countrywide estimates of the health risk posed by a particular pollutant or any risk factor that they'd like to investigate. In principle, this isn't different from estimating what level of temperature rise in the oceans can lead to increased cyclones. In the case of pollution studies, first, data on emissions in an area are collected. While there are a range of pollutants, the bulk of contemporary research interest lies in measuring PM 10 or PM 2.5 levels. A study's ambition depends on how fine-grained the emissions data are. The data can be from a city, industrial regions within a city, a State, residential areas or commercial pockets. It also depends on the sophistication of the sensors used to measure the level of pollutants used. This is influenced by the budget. Invariably, the exercise will involve averaging the emissions in a region to a much larger space. The next step is to collect data on hospital admissions for respiratory and cardiovascular diseases, cancer and associated mortality. Then exposure-response curves are drawn that show how particulate matter concentrations relate to death and disease prevalence. The other category of investigations involve regularly monitoring the pollution levels people are exposed to over time and recording mortality levels. This is a more time-consuming approach but considered more ideal to single out the effects of pollution on death rates.

**What kind of evidence exists to determine mortality from pollution?**

The bulk of studies done to gauge exposure response have been conducted in the U.S. and Europe, in cities that have, on average, good air quality. This is because an increase in particulate matter

concentrations, above background levels, can be more reliably estimated and correlated to the rise in mortality (gauged from hospital records). Most such studies have found a linear relationship between mortality and PM 10 levels. The caveat is that on average those observed were exposed to less than 10 micrograms per cubic metre. Beyond a certain level, the response "flattens out" and it's hard to estimate if concentrations, say, 10 times more, would lead to a mortality spike 10 times more. That's the kind of information relevant for India because background concentrations are much higher than in Europe. The ISLDBI relies on these computed exposures, calculates the pollution levels in various States, finds how many Indians may have been exposed, and computes a death rate. It also adjusts for other causes of mortality.

**Are there exposure studies being done in India?**

India has embarked on a 20-city plan to calculate exposure levels among Indians, including pregnant women. These are funded by the Union Environment Ministry and are expected to be published next year.

## Business & Economics

### Twin troubles

- Economic data released by the government suggest that India may be stepping even closer to stagflation. The Index of Industrial Production (IIP) contracted 3.8% in October, as against a healthy growth rate of 8.4% witnessed during the same month last year. Industrial output, it is worth noting, had shrunk by 4.3% in September. At the same time, retail inflation jumped to a 40-month high of 5.5% in November fuelled mainly by a sharp jump in food prices. Retail inflation is now in the upper band of the inflation range targeted by the Reserve Bank of India (RBI) but might drop as fresh food supplies hit the market. Low growth combined with high price inflation is sure to cause further headaches for policymakers. Economic growth has declined for six consecutive quarters now, making it one of the longest downturns in recent history.

With inflation raising its ugly head now, the RBI, which held rates stable in its recent policy meet, is unlikely to cut rates aggressively in the next few months at least. So, it is entirely up to the government now to find ways to boost growth. Given the seriousness of the slowdown, the government cannot delay reforms. For a long time, the government maintained that the country's growth rate was held back by the tight monetary policy stance adopted by the RBI under its previous governors. But with the benchmark interest rate being cut five times so far this year, the government can no longer shift blame on to the RBI. The favourite defence of the government right now is that the slowdown in growth is merely a cyclical one that will end sooner than later. But regardless of the nature of the current slowdown, it cannot be denied that the Centre has fallen short on its promise of bringing about major structural reforms to the economy. Except for the recent cut in corporate tax rates, the government has not come up with any other significant reform in response to the slowdown. Further, the presence of low growth along with high inflation also raises questions about the root cause of the slowdown, which has been attributed to a drastic fall in consumer demand. But aggressive rate cuts by the RBI that have extended over most of the year cannot stop the continuous slide in growth rate; it may well be that supply-side is also in deep trouble. The answer to the current slowdown lies in economic reforms that can first lift the potential growth rate of the economy. Otherwise, further rate cuts by the RBI will only add to the government's troubles by stoking inflation in the wider economy.

The not-so bright idea of selling the family silver (Trilochan Sastry - Professor, IIM Bangalore)

- When we examine the proposed stake sale of profit-making public sector undertakings (PSUs), a few strategic issues of national importance need to be considered. The first is an ideological one — that Government must get out of business. The second is the need to bring the fiscal deficit down. The third is a long-term financial one: which option, public- or privately-owned, is better for the Government

treasury? A fourth is about national security and self-reliance: can India be under pressure if we do not have full control over petroleum? Why do the United States, China and other superpowers have control over their petroleum reserves?

**Number crunching**

Let us look at the long-term financial issue. The Burmah Shell (Acquisition of Undertakings in India) Act 1976 enabled the Government of India to take ownership by paying ₹27.75 crore. One estimate of that amount in today's terms is to use the inflation factor, which is about 22.42 (between the year 1976 and now). This means that the Government would have paid ₹622.06 crore today. The current market value of Bharat Petroleum Corporation Limited (BPCL) varies between ₹85,000 crore and ₹115,000 crore. The government's share at present is about 53.3% (which it is contemplating selling), that is worth between ₹45,000 crore and ₹61,500 crore. We got the company for a song. How much has the Government earned meanwhile? Since 2011, the total dividend it has earned is about ₹15,000 crore, which is several times the present value of the investment of ₹622 crore. Let us estimate the present value of all future incomes that the Government would earn. One way is to use inflation and calculate what the value of all future flows would be, based on the present value of all future incomes. The average inflation in the last three years has been 4.5%, 3.6% and 3.48% in 2016, 2017 and 2018, respectively, or an average of 3.86%. If the Government sells its entire stake, it would forego future income of about ₹78,589 crore. In addition, the BPCL has also paid taxes of about ₹25,000 crore to the Government since 2011. No doubt the Government will continue to get taxes from the private sector as well. However, the effective tax rate on profits before tax for the BPCL is about 34%, whereas for the private sector player it is between 25% and 28%. So there will be a loss in tax revenue for the Government after any privatisation. In summary, financially, we as a nation are worse off by selling such a profitable venture. As the case of the BPCL and several other PSU 'Navratnas' show, they have given super normal returns to the public exchequer. Instead of selling such high performing PSUs, should we not be selling the loss-making ones?

**Issue of fiscal deficit target**

Another issue underlying the disinvestment is the fiscal deficit target of 3.4%, now reduced to 3.3%. There are many ideological debates among economists about the importance of reducing the fiscal deficit, but we leave that to the experts. Given that revenue collections are not enough, the Government is perhaps planning the sale of well-running PSUs to meet the fiscal deficit target. If the Government does meet its fiscal deficit target by the stake sale of various PSUs including the BPCL this year, how would it meet that target next year? Note that in spite of the huge one-time dividend from the Reserve Bank of India, we are far from meeting the deficit target. Nothing much will change in terms of the expenditure or revenues in the coming years. These strategic sales and dividends cannot be repeated every year. We will be back to the same levels of fiscal deficit. The real way of meeting this target is to cut out wasteful Government expenditure, most of which is on salaries and pensions, and ensuring that the bureaucracy delivers. Unfortunately, the cuts will be in the social sector.

**On national security**

The ideological issue of Government versus private ownership is related to the strategic issue about national security. Natural resources, especially oil, are a strategic national resource. The United States maintains such an underground crude oil reserve to mitigate any supply disruptions. Some comparative figures for such reserves are: the U.S. over 600 billion barrels, China 400, South Korea 146, Spain 120 and India 39.1. India does have a target to substantially increase its reserves. At today's prices to reach Chinese levels of reserves we will need nearly ₹2 lakh crore, which is 10% of the Central Budget. Even if we spread this out over several years, it is still a lot of money. There are two (state-owned) Chinese companies in the top five oil companies; in fact, Sinopec is the world's second largest, just behind Aramco. While China sticks to state-owned national resources, we are moving in the opposite direction. National security also depends on the economic power that a Government has. We do have plans to build perhaps the world's largest refinery in India, with the help of Saudi Arabia, but ownership and control will be in foreign hands. Meanwhile with the

strategic disinvestments, we will lose Government control over both crude and refining. Nothing prevents China or any other country for that matter from buying up refining capacity in India. Is this strategic disinvestment akin to killing the goose that lays the golden eggs? Financially we are worse off, and strategically the nation finds itself in a vulnerable situation. We need to see through the ideological narrative coming from the developed nations. They embraced free trade when it suited them and are now trying to embrace protectionism. China adopted a market system but does not allow this to cloud its thinking when it comes to strategic national issues; the control then remains with the Government. India too needs to re-think its strategy.

CAG hints at massive diversion of LPG

- The Comptroller and Auditor General (CAG) of India, in a report on the Pradhan Mantri Ujjwala Yojana (PMUY), has highlighted the risk of diversion of domestic LPG cylinders for commercial use, as 1.98 lakh beneficiaries had an average annual consumption of more than 12 cylinders. The CAG said this level of consumption seemed improbable in view of the BPL (below poverty line) status of such beneficiaries. "Similarly, 13.96 lakh beneficiaries consumed 3 to 41 refills in a month. Further, IOCL [Indian Oil Corporation Limited] and Hindustan Petroleum Corporation Limited (HPCL) in 3.44 lakh instances issued 2 to 20 refills in a day to a PMUY beneficiary having single-bottle cylinder connection," it said. The scheme was launched in May 2016 to safeguard the health of women and children by providing them with clean cooking fuel. Its target was revised to eight crore LPG connections. As on 31 March 2019, the oil marketing companies had issued 7.19 crore connections, which is about 90% of the target to be achieved till March 2020. To rule out existing LPG connections in beneficiaries' household, de-duplication was to be carried out based on Aadhaar of all family members. "Audit noticed that out of 3.78 crore LPG connections, 1.60 crore (42%) connections were issued only on the basis of beneficiary Aadhaar which remained a deterrent in de-duplication," said the report. The CAG said laxity in identification of

beneficiaries was noticed as 9,897 connections were issued against Abridged Household List Temporary Identification Numbers (AHL TINs), where names of all family members and the beneficiary were blank in the Socio-Economic and Caste Census (SECC)-2011 list. Lack of input validation check in the IOCL software allowed issue of 0.80 lakh connections to beneficiaries aged below 18. Data analysis also revealed that 8.59 lakh connections were released to beneficiaries who were minor as per the SECC-2011 data, which was in violation of PMUY guidelines and LPG Control Order, 2000. It also exposed a mismatch in the name of 12.46 lakh beneficiaries between the PMUY database and SECC-2011 data. The CAG, on field visits, also found that connections were given to "unintended" persons. The audit also highlighted the delay of more than 365 days in the installation of 4.35 lakh connections against the stipulated time period of seven days.

## A good start but challenges begin now

- Shaktikanta Das took charge as the 25th Governor of the Reserve Bank of India (RBI) on December 12, 2018 at a time when the relationship between the government and the central bank had touched a new low. The relationship had turned sour, particularly with Mr. Das's predecessor Urjit Patel, over issues such as the bank's capital framework and governance issues. Finally, Mr. Patel quit. The government quickly found a replacement in Mr. Das. Mr. Das was able to deflect media focus away from the RBI-government tussle. While a committee was appointed to look into the issue of economic capital, the issue regarding RBI's governance took a back seat at the board meetings. After taking charge, Mr. Das went for an extensive consultation exercise with all stakeholders, including banks, non-banks and industry houses, in the process giving a signal that he was ready to listen to divergent viewpoints. This was a departure from the tenure of Dr. Patel who was often accused of not giving an ear to the stakeholders. Under Mr. Das, the Reserve Bank's post-monetary policy press conferences became more interactive as he made it a point to give every journalist a chance to ask questions — a clear departure from his predecessor's tenure when only a few questions were taken. Setting

interest rates, which is the primary policy-making responsibility of the RBI, in the first year of Mr. Das' tenure was not a complicated process. Inflation remained benign, while growth was coming down rapidly. In such a scenario, the debate was not whether interest rates should be reduced but on the quantum. Between February (Mr. Das's first policy) and October, the RBI had reduced the interest rate on all the five occasions when the monetary policy committee met, by a total of 135 basis points (bps). The first sign that policy-making will not be as straight forward was evident in the December 5 policy. As October's retail inflation went beyond the central bank's medium term target of 4%, the RBI decided to pause on rate cuts. The move surprised the market, with yields on the 10-year benchmark government bonds jumping 20 bps in two trading sessions. The complication in setting interest rates was evident from the RBI's statement and the Governor's comment during the interaction with the media. While keeping the rates unchanged, the RBI maintained an 'accommodative' stance, meaning further rate cuts are not off the table. But the central bank lowered the GDP growth estimate to 5% for FY20, sharply down from the 6.1% estimated during the October policy. Inflation projection for the second half of the current financial was raised to 4.7-5.1% compared with 3.5-3.7% projected in October. The growth-inflation conundrum had kicked in for the RBI Governor. Mr. Das acknowledged there was a case to look through the spike in inflation, which was primarily due to food prices, but decided to be on a wait-and-watch mode, for more clarity on the inflation front, the outlook for which was also clouded by an increase in telecom tariffs. He would also wait for the Union Budget to be presented in early February for clarity on government's action to revive growth. And, there could be complications on the exchange front also. While there were few occasions of volatility, the exchange rate has been relatively stable in the last one year on the back of steady inflows. Net foreign direct investment increased to $20.9 billion in the first half of 2019-20 from $17 billion a year ago, while net foreign portfolio investment was $8.8 billion in April-November 2019 as against a net outflow of $14.9 billion in the same period last year. This also helped the central bank to shore

up the foreign exchange kitty that recently crossed the $450-billion mark for the first time. India's foreign exchange reserves stood at$ 451.7 billion on December 3, 2019 — an increase of $38.8 billion over end-March 2019. But with the economy on a downhill path, how long inflows will sustain needs to be seen. Once the outflows start, it will put pressure on the rupee though the import cover of 11 months acts as a cushion. Depreciation of the rupee could make policy-making further complicated. Perhaps the biggest challenge for Mr. Das in his second year would be to address the risk-averse nature of the banks. This was evident from the inadequate monetary transmission. In response to the 135 bps policy rate cut by the RBI, the one-year marginal cost of funds-based rates of banks came down only by 49 bps. The gap between the 10-year benchmark bond yields and repo rate is 155 bps. Year-on-year credit growth of banks is in single digits. Mr. Das, aware of the emerging growth-inflation dynamics, took it head-on, as evident from the pause button the RBI the pressed in the December monetary policy. The RBI cannot mechanically go on cutting interest rates every time, he had said. True, given the challenges the country faces, a mechanical approach will not help. A consultative approach, for which Mr. Das is known, could help the central bank navigate the current economic environment.

SBI under-reports ₹12,000 crore NPA, plunges into losses in FY19

- State Bank of India (SBI), the country's largest lender, under reported ₹11,932 crore of bad loans in the financial year 2018-19, according to a Reserve Bank of India inspection report. This has pushed the bank into losses for the said financial year. According to a filing with the exchanges, SBI had reported ₹1,72,750 crore of gross non-performing assets in FY19, while according to RBI's risk assessment report (RAR), it was ₹1,84,682 crore. The divergence, which is the gap between the regulator's assessment of net NPA and that of the bank, was also ₹11,932 crore. The divergence in provisions for bad loans was ₹12,036 crore. Last month, markets regulator SEBI issued a circular mandating listed banks to disclose divergences and provisioning within 24 hours of receipt of the RBI's final Risk Assessment Report (RAR). Earlier, banks

used to disclose the information on divergence along with their annual financial statements.

Savings with a bonus — financial peace of mind (Aarati Krishnan - Editorial Consultant with the Hindu Business Line)

- The confidence that ordinary Indian savers repose in guaranteed return products has been subjected to hard knocks of late. First there was the scare about public sector banks being placed under prompt corrective action by the Reserve Bank of India (RBI). Then there were the defaults by AAA-rated non-banks. Recently, the RBI's strictures on Punjab & Maharashtra Co-operative Bank Limited (PMC) have opened a can of worms on the safety of co-operative banks, and the gaps in the working of deposit insurance.

  **Issue of financial literacy**

  But whenever Indian savers complain of the lack of safe investments, they are usually told to observe more due diligence as far as their investments are concerned or embrace market risks through vehicles such as mutual funds. While this advice may be appropriate for affluent urban savers, it is quite impossible to follow for a majority of households in India which have a subsistence level of income and scant access to financial literacy. The average Indian earned a per capita income of ₹1.26 lakh in FY19. A Global Wealth report from Credit Suisse (October 2019) found that the median wealth of an Indian adult was $3,042 (₹2.1 lakh). A survey on financial literacy among Indian savers by the Tarun Ramadorai committee in 2015, found that over 30% of savers did not grasp the concept of compound interest. This highlights the crying need for Indian savers to have access to simple fixed return products that offer complete safety of capital without their having to dig into balance sheets. The small savings schemes (also called national savings schemes) from India Post fit this description to a tee. Given that these schemes make up part of Central government borrowings, they are sovereign-guaranteed. The Indian Government in any case ends up borrowing ₹6-7 lakh crore from the public markets every year to fund its fiscal deficit. Today, it is mainly institutional investors who get to participate in Government of India securities (G-

sec) auctions. There is no reason why this opportunity cannot be opened up to more small savers instead. But if savers are in search of safe options and post office schemes fit the bill, why are they so under-the-radar? Numbers from the RBI show that by the end of FY19, while commercial banks were sitting pretty on deposits of ₹126 lakh crore, small savings schemes managed just ₹8.9 lakh crore. It is bemusing to note that HDFC, a private sector non-bank, has managed to garner the same volume of deposits (₹1.2 lakh crore) as post office time deposits with their massive outreach. There is immense scope for reviving the popularity of the post office schemes, if the Central government can make five design changes that tailor them to better meet the needs of small savers.

**Transparent spreads**

A few years ago, in a bid to wean savers away from administered interest rates, post office schemes were transitioned to floating rates by pegging their interest rates to government securities with comparable maturity. Over time though, the quarterly rate changes have acquired a life of their own, bearing limited correlation to market rate movements. There is nothing wrong, really, in the Central government offering small savers with special needs a premium over prevailing market interest rates. But to make such rate moves transparent, it is best that the Government specifies and sticks to a fixed spread over G-sec rates for each scheme. The banking lobby is bound to be up in arms against "high" rates on small savings impeding transmission. But the caps on individual investments in the more popular schemes (₹1.5 lakh for Public Provident Fund, ₹15 lakh for Senior Citizens Savings Scheme (SCSS), ₹4.5 lakh for Monthly Income Account) restrict the sums that savers can park in these schemes. Such caps can be extended to all schemes with high spreads. This apart, the very intent of re-designing post office schemes is to attract bottom-of the-pyramid savers who are not considered lucrative by banks. Indian savers have felt a need for 10-year or 20-year fixed return instruments to park their long-term money. Presently though, a majority of debt options available to them are in the one to five-year bucket. Even among the post office schemes, six of the nine available ones cater to

savings needs for one to five years only. Investors who would like a longer-term option have just two choices — the Public Provident Fund (PPF, 15 years) and Kisan Vikas Patra (KVP, 9 years), as the Sukanya Samriddhi Yojana is restricted to those with a girl child. Re-introducing National Savings Certificates in the 10, 15 and 20-year tenors can meet this need while helping the Central government source long-term funds for capital spending. While deposits with private entities offer both regular income and cumulative options, with post office schemes it is an "either or" choice. Having both options on the menu can help savers decide whether they want regular cash flows or compounding benefits.

**Better customer service**

Finally, the foremost reason savers cite in shying away from post office schemes — despite their safety and reasonable returns — is the woefully poor customer service that they need to deal with. At a time when Indians from every strata have taken to digital transactions like ducks to water, India Post continues to rely on archaic modes of working in dealing with customers. Its insistence on a paper application process, old-fashioned passbooks, cheque payments and branch visits ensures a process that is time-consuming and arduous for those seeking to invest their money with it. While India Post has been transitioning its record-keeping and backend operations to the digital mode, it appears that this has yet to percolate to its customer interface. On this aspect, the organisation can take a leaf or two out of the books of non-banks such as HDFC or Sundaram Finance who make deposit investing such a seamless experience for their customers. If India Post can shed its half-hearted attempts to transform itself into a payments bank and convert itself into a digitally enabled, pure deposit-taking bank, it can render a yeoman service both to the government and small savers of this country.

Karvy stock scandal

- On November 22, the Securities and Exchange Board of India (SEBI) passed an ex parte ad interim order against Karvy Stock Broking, a Hyderabad-based firm, prohibiting it from taking new clients in respect of its stock broking activities. In view of the recent developments in

the securities market, the National Stock Exchange issued an 11-point advisory to investors on how to keep stocks safe.

**How many customers does Karvy have?**

Karvy Stock Broking has more than a million retail broking customers and executes over two lakh transactions almost daily on behalf of its clients. The broking firm has been in the news for the last few weeks as some of its clients complained of delayed payouts. Typically, a person should get the money in his account on the third day of the transaction but some clients alleged that they did not receive the money after more than a week of executing the trades.

**Why was the payout delayed?**

The broking firm had initially said the delay in payouts was on account of technical issues, but according to a preliminary probe by SEBI and the NSE, the late transfer was on account of alleged misuse of client securities. According to the SEBI order issued on November 22, the broking firm credited funds generated by pledging client securities into its own account. SEBI has barred Karvy Stock Broking from signing new clients. Further, an amount of ₹1,096 crore was transferred from the broking outfit to its group entity Karvy Realty between April 2016 and October 2019. Incidentally, appeals filed at the Securities Appellate Tribunal (SAT) further reveal that the broking firm raised funds from entities such as Bajaj Finance, ICICI Bank, HDFC Bank and IndusInd Bank by pledging client securities. For instance, Karvy Stock Broking owes more than ₹300 crore to Bajaj Finance. As per the lenders, Karvy Stock Broking had even given an undertaking that the securities that were being pledged were its own and not of the clients.

**What happens to the affected clients?**

Most of the affected clients have got their shares. While it is estimated that a total of around 95,000 clients of Karvy Stock Broking have been affected, the depository has already transferred the securities of nearly 83,000 clients from the broking firm's account to the respective client accounts. The rest of the clients will have to wait since SAT has put a stay on any further transfer of securities from Karvy's account to client accounts. This directive was issued based on the appeals filed by the lender entities, Bajaj Finance, ICICI Bank, HDFC Bank and IndusInd Bank,

wherein the lenders argued that since these securities were pledged with them, they have a right on the shares. SAT has told SEBI to give the lenders an opportunity for a hearing and then pass an order by December 10.

**What is the current status?**

The Bombay Stock Exchange and the NSE have suspended the broking membership of Karvy. The NSE is conducting a forensic audit to ascertain further details regarding alleged misuse of client securities. Karvy Stock Broking filed an appeal at SAT to challenge its suspension, but the appeal was dismissed with Karvy being directed to file an appeal with the NSE. The coming week would see the regulator decide on the appeal filed by the lenders from whom Karvy Stock Broking raised funds by pledging client securities. The capital market watchdog will take further action against Karvy Stock Broking as well since the earlier order was only an ex parte interim order.

**What is the way out for investors?**

While clients of Karvy Stock Broking have obvious reasons to be worried, the SEBI order has clearly stated that the broking firm will not be able to further misuse clients' securities even if it has the power of attorney as the depositories have been given clear instructions in this regard. More importantly, most of the affected clients have already got their securities in their respective accounts. Clients of Karvy Stock Broking, however, should ensure that all their holdings are being reflected in their demat accounts, say market experts. This can be easily done by logging into the demat account and checking the portfolio. If an investor is yet to receive the payout for a trade executed more than 3-4 days back, it is better to approach the stock exchanges — the Bombay Stock Exchange or NSE — as they have an in-house dedicated investor grievance redressal mechanism to deal with such cases. Also, since the broking licence of Karvy Stock Broking has been suspended, its clients will have to switch the account to another broking firm, which can be done easily.

## Life & Science

### 50th PSLV launch carries radar satellite

- India's Polar Satellite Launch Vehicle (PSLV) marked its 'Golden Jubilee' launch on Wednesday by injecting India's advanced radar imaging satellite RISAT-2BR1 and 9 other customer satellites from Japan, Italy, Israel and the U.S.A. into their intended orbits. The PSLV, which has a history of successful launches of payloads that include Chandrayaan-1, Mars Orbiter Mission and the space recovery mission, soared into clear blue skies at 3.25 p.m. from the refurbished first launchpad, marking the 50th launch for the vehicle "We also achieved a major milestone of 75 launches from our spaceport today. Initially, the PSLV had a carrying capacity of 850 kg, and over the years it has been enhanced to 1.9 tonnes. The PSLV is very versatile having various mission options," Mr. Sivan added. The PSLV had helped take payloads into almost all the orbits in space including Geo-Stationary Transfer Orbit (GTO), the Moon, Mars and would soon be launching a mission to the Sun, the ISRO chief noted. Mr. Sivan observed that in the last 26 years, the PSLV had lifted more than 52 tonnes into space, of which about 17% were for commercial customers. "Clearly, this vehicle has done wonders," he said, while commending the work of all the scientists who had built the workhorse vehicle from ground up and brought it to its current status. He also released a book commemorating the 50 launches and the scientists involved in them. The PSLV has failed only twice in its history — the maiden flight of the PSLV D1 in September 1993 and the PSLV C-39 in August 2017. S. Somanath, Director, Vikram Sarabhai Space Centre said while it had taken ISRO 26 years to achieve 50 launches, the next 50 would likely be done in the coming five years. The RISAT-2BR1 will be used for agriculture, forestry, disaster management support and national security. ISRO will launch the next version of RISAT within the next two months, said P. Kunhikrishnan, Director, UR Rao Satellite Centre (URSC).

Why planet orbiting white dwarf star is a breakthrough discovery

- Some 4.5 billion years from today, our Sun will run out of fuel and shed its outer layers. In the process, it will destroy Mercury, Venus and probably Earth, and is expected to radiate enough high energy photons to evaporate Jupiter, Saturn, Uranus and Neptune. What will remain of the Sun is called a "white dwarf". Can any planet orbiting a star survive such an event? New evidence suggests it can. Astronomers from the University of Warwick and the University of Valparaíso have reported the first indirect evidence of a giant planet orbiting a white dwarf star (WDJ0914+1914). It is the first time any such planet has been found. The study, in the journal Nature, suggests there could be many more planets around such white dwarf stars waiting to be discovered. The Neptune-like planet orbits the white dwarf every ten days, and cannot be seen directly. The evidence is in the form of a disc of gas (hydrogen, oxygen and sulphur) formed from its evaporating atmosphere. Spikes of gas were detected by the Very Large Telescope of the European Southern Observatory in Chile. The discovery is significant, because while there was growing evidence accumulated in the past two decades that planetary systems can survive into white dwarf stars, only smaller objects such as asteroids had been detected so far. This is the first evidence of an actual planet in such a system.

What is FrogPhone?

- Researchers have developed a device that will allow scientists to monitor frogs in the wild. Described as the world's first solar-powered remote survey device that can be installed at any frog pond and which receives a 3G or 4G cellular network, it has been named "FrogPhone". It has been developed by a team from various Australian institutions, including the University of New South Wales and the University of Canberra. A field trial conducted between August 2017 and March 2018 in Canberra proved successful, the British Ecology Society said in a statement. With FrogPhone, researchers can simply "call" a frog habitat. After a call is made to one of the FrogPhones already on a site, the device will take three seconds to receive it. During these few seconds, the device's temperature sensors will get activated, and

environmental data such as air temperature, water temperature and battery voltage will be sent to the caller's phone via a text message. Because frogs are most active during night, researchers are usually required to make nightly observations in order to monitor them on site. The FrogPhone will allow researchers to dial these devices remotely, and analyse the data later. It will reduce costs and risks, including the negative impact of human presence on the field site, the researchers say. These devices also allow for monitoring of local frog populations more frequently than before, which is important because these populations are recognised as indicators of environmental health. The researchers have described the new device in last week's edition of the journal Methods in Ecology and Evolution.

## How to inspect bodies without cutting them up

- It is likely to be possible soon to carry out autopsies without dissecting the body, Health Minister Harsh Vardhan told Rajya Sabha. India will be the first country in South and Southeast Asia to carry out these "virtual autopsies", the Minister said.

  **So what is a virtual autopsy?**

  In a virtual autopsy, doctors use radiation to examine the innards to reach a conclusion about the cause of death. A CT or an MRI machine could be used, in the same way that they are used to scan a living human's body. A 2013 paper titled 'Virtopsy (virtual autopsy): A new phase in forensic investigation' said: "An autopsy (postmortem examination, autopsia cadaverum, or obduction) is a highly specialized surgical procedure that consists of a thorough examination of a corpse to determine the cause and manner of death and to evaluate any disease or injury that may be present. Virtopsy is a word combining 'virtual' and 'autopsy' … for the purpose of autopsy and to find the cause of the death. Virtopsy can be employed as an alternative to standard autopsies for broad and systemic examination of the whole body as it is less time consuming, aids better diagnosis, and renders respect to religious sentiments." (Journal of Forensic Dental Sciences; K B Tejaswi and E Aarte Hari Periya)

**When is this service likely to start?**

In his reply to a starred question from Rewati Raman Singh of the Samajwadi Party, Dr Harsh Vardhan said: "The All India Institute of Medical Science (AIIMS), New Delhi and Indian Council of Medical Research (ICMR) are working together on a technique for postmortem without incising/dissecting the body. This technique is likely to become functional in the next six months."

**But what is the need?**

As the Minister acknowledged, the traditional post-mortem often makes members of the dead person's family uncomfortable. That, in fact, is the primary reason for the increasing use of virtual autopsies internationally. Dr Harsh Vardhan said ICMR and AIIMS have studied global practices, and taken up this project for "dignified management of dead body". According to a paper in The Lancet, the advent of virtual autopsy owes to the "Longstanding public objection to dissection of cadavers (that) re-emerged in the UK as a major issue after organ retention scandals in the late 1990s. Some groups —notably Jewish and Muslim communities — have religious objections to autopsy, and demand for a minimally-invasive alternative has increased." A virtual autopsy is also faster than a traditional one — 30 minutes against 2½ hours, Dr Harsh Vardhan said — and more cost-effective.

**Is this currently practised anywhere?**

According to a 2016 article titled 'The Rise of Virtual Autopsy' in the Journal of Forensic Pathology, virtual autopsy began in Sweden, but is now a "standard technique" in major centres in Japan, the US, Australia, and many European countries. In the 1990s, a "post post-mortem" MRI service for "selected non-suspicious deaths" was introduced in Manchester, UK. This followed demands from the Jewish community for a non-invasive autopsy. Later, the Muslim community in the northwest of England too, joined in the demands. The Royal College of Pathologists UK has issued guidelines for virtual autopsies.

**How accurate is a virtual autopsy?**

According to the 2012 paper by Ian S D Roberts and others in The Lancet, "Radiologists provide a cause of death that is accepted by the Coroner with no autopsy in 90% of cases". In 2018, in an article in the Journal

of Pathology Informatics, Russian and Italian scientists compared the results of virtual autopsy and traditional postmortem. "Out of 23 cases for which the traditional post mortem examination found a cause of death, 15 (65%) were diagnosed correctly using virtual autopsy, these cases were considered as true positives. For one case for which the cause of death was unascertained, the same result was also obtained during the virtual autopsy. This case was considered as true negative.

Coffee is a health drink, but do not overdo it

- Metabolic syndrome is a condition which is estimated to affect more than one billion people across the globe and it increases the risk of cardiovascular problems, including coronary heart disease and stroke. A report from the Institute for Scientific Information on Coffee (ISIC) highlights the potential role of coffee consumption in reducing the risk of developing metabolic syndrome and states: "The new report of meta-analysis has suggested that drinking 1-4 cups of coffee per day is associated with a reduced risk of metabolic syndrome in observational studies." A meta-analysis combines the results of many scientific studies addressing the same question, analyses the result of all these, identifies how well they lead to the same conclusion, and to what level they may differ from one another. It thus offers a more robust summary of the main conclusion and the acceptable "take home message". Dr. Guiseppe Grosso and colleagues of the Catania University, Italy conclude that coffee consumption reduces the risk of type 2 diabetes, hypertension and so forth. Studies shows that regular consumption of coffee helps in reducing the risk of hypertension. These all suggest that coffee is a health drink, but in small amounts (3-5 cups day) Drinking too much of it is also bad. Mayo Clinic advises that going beyond this is an overdose, and that the increased caffeine levels lead to migraine headache, insomnia, restlessness, muscle tremors, and fast heartbeats. It is thus wise to limit the cups. Also, it should not be given to children. Pregnant mothers may further restrict their cups.

  **Arrival in India**

  Coffee, originally Ethiopian in origin, was quickly taken over and held tight by the Arabs as their own drink (since wine was prohibited) that

alerts the imams and the believers. The 16th century Sufi saint Baba Budan smuggled several seeds of it from the Arab monopoly, and planted them in Chikkamagalur of the Mysore kingdom in 1670. Although, it might have been brought to the Malabar Coast earlier by Arab traders. It is thus that coffee was planted and grown in Karnataka, Kerala and Tamilnadu. Recently, it is also grown in the Araku Valley of Andhra Pradesh and more recently in some of the 'seven sisters' states of northeast India, And this also appears how coffee drinking seems to have become a popular daily drink in Peninsular India since centuries. But then most south Indians drink not pure coffee, but a mixture of coffee and chicory. Chicory, a native plant, is cultivated and grown the in the Mediterranean regions of Spain, Greece, and Turkey. It became popular in Europe both on its own and as an addition to coffee. The site "Bynemara Tales-Medium" points out in its 19-7-2017 issue that France started using it due to the shortage of coffee there in the early 1880s. Since then the coffee-chicory duo became popular. The English writer Charles Dickens (of 'David Copperfield' and 'A Tale of Two Cities' fame) is said to have written: "By the combination of a little chicory with coffee, the flavour of the coffee is not destroyed, but there is added to the infusion a richness of flavour, and a depth of colour - a body- which renders it to very many people much more than welcome as a beverage". And that the colonial British played a key role by introducing what they called as "camp coffee", a secret blend of water, sugar, 4 % caffeine-free coffee essence and 26% chicory essence. And Indian soldiers and people at large warmed up to it. Over time, South Indian coffee has come to mean a mixture of coffee and chicory in varied ratios, anywhere from 80% coffee and 20% chicory powder to the more common 60-40 ratio. We also cultivate chicory in India - in Gujarat and UP, where the soil and the climate suits it best.

**Going beyond south India**

Traditionally, the South Indian Coffee confined itself to the four southern states, while tea was more popular and widely drunk almost exclusively in the North, since they produced, harvested and marketed the tea plant and its leaves in Assam, West Bengal and some of the north-eastern states, where the climatic and soil conditions suit the

plant best. But in recent times, more 'Southies' have also taken to tea, not as an alternative, but additionally. And the 'Northies' to coffee, again additionally. A major reason behind this has been marketing. Even here, apart from 'filter coffee', we now have other genre such as espresso, cappuccino, and such Western introductions, particularly among the city dwellers.

A typhoid vaccine offers 82% protection

- A typhoid vaccine (Typbar TCV) developed by the Hyderabad-based Bharat Biotech has shown 81.6% efficacy in preventing typhoid fever at 12 months in a Phase-III clinical trial. The trial was carried out in Nepal in over 10,000 children who received the vaccine. A single does of the vaccine was found to be effective in preventing typhoid in children aged nine months to 16 years. The vaccine confers protection two-three weeks after vaccination. The duration of protection is currently not known. The Typbar TCV vaccine was recommended by WHO's Strategic Advisory Group of Experts on Immunization (WHO-SAGE) in December 2017. WHO prequalified the vaccine in January 2018. Typhoid fever is caused by the highly contagious Salmonella Typhi bacteria. Nearly 11 million fall sick due to typhoid and about 1,17,000 deaths are reported each year. The bacteria spread through contaminated food or water. The Typbar TCV typhoid vaccine tested in Nepal is a conjugate vaccine. Conjugate vaccine is one in which the antigen (which is a polysaccharide in this case) is chemically linked to a carrier protein. Two other typhoid vaccines — polysaccharide typhoid vaccine and live, weakened typhoid vaccine — are already used commercially. But the efficacy of the vaccines to protect against typhoid is lower than the conjugate vaccine that was tested in Nepal. "The other two vaccines offer 60-70% protection unlike the conjugate vaccine which confers nearly 82% protection. Two doses of live, weakened typhoid vaccine are needed to reach 60-70% protection," says Dr. V. Krishna Mohan, Executive Director at Bharat Biotech. "More importantly, the conjugate vaccine can be given to babies as young as six months, while the other two vaccines cannot be given to children below two years of age." According to SAGE, in high-incidence settings, a large proportion of

severe typhoid fever cases occur in children aged below two years. While typhoid bacteria can be treated with antibiotics, the microbes have developed resistance against multiple antibiotics. Multi-drug resistant typhoid bacteria are seen in south Asia including India. Since 2016, extensively drug-resistant (XDR) typhoid outbreaks have been reported from Sindh province in Pakistan. According to an Editorial accompanying the paper, XDR typhoid has been found in India, Bangladesh, and Pakistan. "Right now in Pakistan, a strain of typhoid has developed resistance to all but one of the antibiotics we use to treat the disease, threatening to take us back to the days when typhoid killed as many as one-fifth of the people that contracted it," Dr. Seth Berkley, chief executive of Gavi, the Vaccine Alliance, told BBC. Bharat Biotech has been supplying the typhoid conjugate vaccine to Pakistan since 2017. "So far about 10 million vaccines have been supplied to Pakistan," says Dr. Mohan. Pakistan is the first country to introduce the typhoid conjugate vaccine as part of its national immunisation programme.

## Novel molecule to combat multidrug-resistant bacteria

- Screening a small-molecule library of about 11,000 compounds, researchers at the Indian Institute of Technology (IIT) Roorkee identified a potent molecule that exhibits broadspectrum bactericidal activity against multidrug-resistant bacteria — Escherichia coli, Acinetobacter baumannii, Klebsiella pneumoniae and Mycobacterium tuberculosis. The molecule also shows antibacterial activity against Staphylococcus aureus and diarrhoea causing Clostridium difficile. In mice infected with sepsis-causing bacteria A. baumannii, the molecule was found to significantly reduce the bacterial load in the spleen, lungs, kidney and liver at half the dose of a well-known drug nitrofurantoin. The results were published in Journal of Antimicrobial Chemotherapy.

  **Nitrofuran class**

  The molecule belongs to the nitrofuran class of antibiotics — nitrofurantoin and furazolidone — which are routinely used for treating urinary tract infections and intestinal ailments, respectively. The team

led by Ranjana Pathania from the Department of Biotechnology at IIT Roorkee found that the molecule kills the bacteria by damaging their DNA as well as by inhibiting cell division. When half the concentration required to kill the bacteria was used, the researchers found the daughter cells were unable to separate on cell division, leading to the bacteria forming into long filaments. “Since the molecule targets two pathways to kill the bacteria, microbes are less prone to resistance generation or would take a longer time to develop resistance,” says Prof. Pathania. “Even at 16-fold less concentration, the molecule was more effective in killing E. coli compared with nitrofurantoin,” she says. The molecule was found to be effective against both gram-negative and Gram-positive bacteria as well as against anaerobic bacteria such as C. dificile. Compared with nitrofurantoin and furazolidone drugs, the molecule was able to kill anaerobic bacteria at many times lower concentration. The team generated mutants to the molecule and ascertained that the molecule was a pro-drug like the rest of the nitrofuran class of antibiotics. Bacteria are less likely to develop resistance against a **pro-drug** as it becomes active only after getting inside the bacteria. The active components formed from the pro-drug are potent and short-lived, thus not giving the bacteria sufficient time to develop resistance.

**Persister bacteria**

Besides killing actively dividing bacteria, the molecule was effective against persister bacteria that remain in a dormant state. Persister bacteria can survive high doses of antibiotic treatment and are responsible for causing recurring bacterial infections. The researchers generated E. coli persisters and tested the ability of the molecule to kill them using two, four and eight times the minimum dosage required to kill the bacteria. “By the end of 12 hours, there’s a significant reduction in the persisters at four and eight times the MIC,” says Timsy Bhando from IIT Roorkee and the first author. “Pro-drug does not differentiate between dormant and metabolically active bacteria and so they get into even the dormant bacteria. The molecule then kills the dormant bacteria by damaging the DNA.”

**Doubly effective**

Not only was the molecule able to inhibit biofilm formation (which helps bacteria to protect themselves from the action of antibiotics), but was also effective in disrupting the already formed biofilms. Compared with the molecule, both nitrofurantoin and furazolidone drugs displayed "poor ability" to eradicate already formed biofilms. Bacteria generally can tolerate antibiotics by flushing out the drugs using the efflux pumps. "Even when we shut down the efflux pumps using an inhibitor, the amount of molecule required to kill the bacteria did not reduce much. So the efflux pumps are ineffective in pushing out the molecule from the inside the bacteria," says Dr. Bhando. Generally, reactive oxygen species (ROS) generated by a drug helps kill the bacteria. But in the case of the molecule identified by the team, generation of the reactive oxygen species followed bacterial killing. To ascertain if ROS generation killed the bacteria or was produced after the death of the bacteria, the researchers pre-treated E. coli with vitamin C, an antioxidant that removes the ROS. "Even after pre-treatment with vitamin C, bacteria were dying. So ROS is a consequence of DNA damage and was not the cause of bacteria death," Pathania says. The study was done in collaboration with Government Medical College and Hospital, Chandigarh, AIIMS, Bhopal and AIIMS, Delhi.

Measles outbreaks continue unabated

- Even as reported measles cases globally during 2000 to 2018 decreased by 59%, there has been a spike since 2016. Compared with over 1,32,000 reported cases in 2016, the numbers shot up to over 3,53,000 in 2018. While the numbers in 2018 were more than double the previous year, the numbers in 2019 have already surpassed those of 2018. By mid-November 2019, over 4,00,000 cases were reported globally. Since measles surveillance is generally weak, WHO and the Centres for Disease Control and Prevention resorted to estimating the number of measles cases and deaths. Based on an updated estimation model, there have been nearly 10 million cases and over 1,42,000 measles deaths in 2018. Last year, the Democratic Republic of the Congo, Liberia, Madagascar, Somalia, and Ukraine accounted for 45% of all

reported cases. The situation worsened in Congo by November, with a nearly four-fold increase in cases (from 65,000 in 2018 to 2,50,000 in 2019) and over 5,100 deaths. The situation in Ukraine is grim. After a 50% drop in the number of cases in 2018 compared with 2017, the trend has now reversed — 58,000 cases by mid-November this year, which is 4,000 more than in 2018. There has been a decline in the other three countries mentioned that reported the most number of cases last year. Vaccine hesitancy has been highlighted for the staggering spread in cases globally. In DR Congo, there is low institutional trust, misinformation, vaccine shortage and even attacks on health-care centres and workers leading to the spread of both measles and Ebola. The Philippines and the small Pacific island of Samoa serve as a textbook case of the sudden emergence of vaccine hesitancy. Mass immunisation using a newly approved dengue vaccine in Philippines, before the risks associated with the vaccine were reported by the manufacturer, shattered public trust in vaccines; so low vaccine coverage led to measles and polio outbreaks. In Samoa, an error in preparing the measles, mumps, and rubella (MMR) injection led to the death of two infants. Fear-mongering led to a fall in vaccine uptake, leading to an outbreak of measles. But in many European countries and the U.S., vaccine hesitancy has been on religious grounds and primarily due to anti-vaccination campaigns spreading fake news about vaccine safety. To counter rising hesitancy, about a dozen European countries have already introduced laws making vaccination mandatory. New York City too introduced such a law when the U.S. nearly lost its measles elimination status. Such laws may prove counterproductive in the long run, and the only way to increase vaccine uptake is by educating the public. With 2.3 million children not vaccinated against measles last year, India has much to do to protect its young citizens.

**Preventable condition**

Measles can be prevented through two doses of vaccination. But the number of children who are not vaccinated against measles is alarmingly high in six countries. At 2.3 million, India has the second highest number of children who are not vaccinated against measles, the report published in Morbidity and Mortality Weekly Report (MMWR)

says. With 2.4 million, Nigeria has the most number of unvaccinated children. The other four countries with the most number of unvaccinated children are Pakistan (1.4 million), Ethiopia (1.3 million), Indonesia (1.2 million) and the Philippines (0.7 million). In 2017, 2.9 million children in India under one year of age had not been vaccinated with the first dose, according to UNICEF. In one year, the number of unvaccinated children in India had reduced from 2.9 million to 2.3 million. The corresponding reduction in the case of Nigeria has been much more — from nearly 4 million unvaccinated children in 2017 to 2.4 million in 2018. There were nearly 70,000 cases of measles in India in 2018, the third highest in the world. In 2019, over 29,000 confirmed cases have been reported to the WHO. The WHO recommends 95% coverage using two doses of measles vaccine to prevent outbreaks. Though vaccine coverage with first and second dose has increased globally since 2000, it has not reached anywhere near 95%. In 2018, only 86% of children globally received the first dose through routine immunisation. In the case of second dose, the coverage globally is just 69%.

**Failing to immunise**

In India, the first dose of measles vaccine is given at nine-12 months of age and the second dose is given at 16-24 months of age through the national immunisation programme. But it appears that millions of children in India do not receive measles vaccine through routine immunisation activities. According to the MMWR report, in 2018, 19.2 million children globally worldwide did not receive the first dose through routine immunisation services. Nearly 163 million children in India received the measles vaccination during mass immunisation campaigns. India accounted for 47% of the 346 million children across the world who received measles vaccine during mass-immunisation campaigns.

**Effective strategy**

Mass immunisation campaigns are an effective strategy for delivering vaccination to children who have otherwise been missed by routine services. But it does reflect how many children get missed by the routine immunisation programme. The first dose of measles vaccine

was introduced as part of the national immunisation programme in the 1990s. Based on the WHO's recommendation to administer a second dose to prevent infection and death in 90-95% of vaccinated children, India introduced the second dose from 2010 onwards. India was one of the last countries to add a second dose of measles vaccine as recommended by the WHO. The first mass immunisation campaigns for the second dose of measles vaccine were launched in 2010 in 14 States where the coverage for the first dose was below 80%. The campaign targeted children aged nine months to 10 years of age.

## Combination therapy using malaria drug quickly clears TB

- Researchers from Bengaluru have made an important discovery of the mechanism used by TB bacteria to tolerate TB drugs, which necessitates longer treatment of six-nine months. They have also demonstrated that a drug combination that prevents the bacteria from inducing this mechanism leads to almost complete clearance of the bacteria from the mice lungs in just two months of therapy. If further studies and trials show similar results, a shorter treatment regimen might be sufficient to treat drug-sensitive TB. The common notion is that only the non-replicating or slowly metabolising TB bacteria become tolerant to anti-TB drugs. But the team led by Amit Singh from the Department of Microbiology and Cell Biology, and Centre for Infectious Disease Research at the Indian Institute of Science (IISc) found a fraction of the bacteria inside the macrophages was able to tolerate anti-TB drugs even when actively multiplying. The researchers found that using an already approved anti-malaria drug chloroquine in combination with a TB drug isoniazid can almost clear all the bacteria from the lungs of mice and guinea pigs in just eight weeks. In addition, the drug combination also reduces the chances of TB relapse. The results were published in the journal Science Translational Medicine. Reducing the pH to make it acidic is the first-line of defence by macrophages when infected with pathogens. But the researchers found that instead of controlling the TB bacteria, the mildly acidic pH was actually facilitating a fraction of the bacteria to continue multiplying and develop drug tolerance. The drug-tolerant bacteria were found in

macrophages that were more acidic (pH 5.8) while the drug-sensitive bacteria were seen in macrophages that were less acidic (pH 6.6). "We hypothesised that reverting the pH within macrophages to its normal state could probably make the bacteria sensitive to antibiotics," Prof. Singh says. "The chloroquine drug does just that — it neutralises the pH within the macrophages. This prevented the bacteria from inducing the mechanism to protect themselves from oxidative stress. So no drug-tolerant TB bacteria emerged." Once the pH is neutralised, the isoniazid drug was able to eradicate TB from animals. "We observed threefold reduction when we combined chloroquine with rifampicin and fivefold reduction when we used chloroquine-isoniazid combination."

Second giant earthworm found in Karnataka village

- Applied zoologists have found one more giant earthworm in Kollamogaru village near the temple town of Kukke Subrahmanya in Karnataka, prompting them to take up a more elaborate exploration of the area for further studies. The earthworm found by Nishant Katta, an applied zoologist settled in the village, measured 2.6 ft in length and 3 cm in width, K.S. Sreepada, professor of applied zoology, Mangalore University, told The Hindu. "The creature was moving near a stream. It was not inside the soil when found," the professor said. It becomes the second giant earthworm reported in the Western Ghats and the coastal belt of Karnataka so far. The first one, found in the same village this January, measured 3.1 ft in length and 2 cm in width. It was found by workers in the farmland of Mr. Katta. The second one was found within a kilometre radius from the spot where the first one was found. Both have now been preserved in the university for further studies. Vivek Hasyagar, a research scholar in the Department of Applied Zoology working on earthworms in the university, said that in India, J.M. Julka (2008) had reported the largest earthworm — "Drawida nilamburensis", which belongs to the Moniligastridae family. That specimen, from the Nilgiris, measured 3.2 ft in length. Mr. Sreepada said about 20 km radius in the village will now be explored from next week to ascertain if there are more such giant earthworms in the vicinity. In addition, one of the preserved earthworms would be dissected to study its internal organs

for confirmation of the scientific name of the species. "External morphology of the second earthworm is clearly visible. Hence, it is possible to identify the scientific name. However, to study the internal organs it will be dissected," the professor said. Mr. Sreepada said landslides and friction in the neighbouring Kodagu region during this and the last rainy season might have caused their displacement, making them more visible. But more studies are needed in this regard. Earthworms become inactive when there is no conducive soil condition for them to feed. The giant earthworms begin migrating at night during the pre-monsoon and post-monsoon periods, he added.

How the barcode was born, how it changed retail

- Engineer-scientist George Laurer died in Wendell, North Carolina, at age 94. He was the co-developer of the Universal Product Code (UPC), or barcode, in 1973. It is an invention that changed the way businesses work.

  **Before the barcode**

  Today, shoppers simply pick up a product at a store or a mall, and pay the bill as determined by a scan of the barcode. Before the invention, store owners had to assign employees to individually label each product on sale. Laurer recalled the cumbersome process in a 2010 interview to The Washington Post: "Grocery stores in the 1970s were dealing with soaring costs and the labour-intensive requirements of putting price tags on all of their products." That's when Laurer invented barcode together with Norman Joseph Woodland, who died in 2012.

  **How the idea took shape**

  Barcode was the brainchild of Woodland; Laurer is credited with bringing the idea to fruition. It was in the 1950s that Woodland thought about developing a system based on barcode symbology, called Bulls-Eye Barcode, which would describe a product and its price in a code readable by a machine. Initially, Woodland took inspiration from the Morse Code, the well-known character-encoding scheme in telecommunications defined by dots and dashes. Woodland's idea seemed workable but he was unable to develop the system as the cost of laser and computing technology was extremely high in the 1950s.

Two decades later, in the 1970s, Laurer, who was then working for IBM, put Woodland's idea to work, armed with less expensive laser and computing technology. Laurer found that a rectangle system, which we see on most barcodes today, would be more workable than Bull's-Eye, which used a series of concentric circles that looked complicated. He developed a scanner with strips instead of circles. The very first barcode transaction was on a pack of Wrigley's Juicy Fruit chewing gum.

**What it is today**

Over the years, the barcode has transformed the way the retail industry functions globally. Barcodes can be found in hundreds and thousands of products for identification and scanning, and allow retailers to identify prices instantly. They also allow for easy check-outs and fewer pricing errors, and let retailers keep better account of their inventory. The barcode also changed the balance of power in the retail industry. For a small, family-run convenience store, the barcode scanner was an expensive solution to problems they did not really have, BBC World explained in a 2017 article. But big supermarkets could spread the cost of the scanners across many more sales. They valued shorter queues, and also needed to keep track of inventory. As a result, as the barcode spread in the 1970s and 1980s, large retailers also expanded.

DreamIAS