

Rajnath promises justice to dead civilians' kin

Defence Minister directs all ranks in J&K to undertake operations based on hard intelligence, asks commanders to have zero tolerance for violation of established operating procedures; terming soldiers as 'our protectors', he said it is their duty to 'win people's hearts'; praises local people for their efforts in bringing the UT into the mainstream

Peerzada Ashiq
JAMMU

Defence Minister Rajnath Singh, on a tour of Jammu and Kashmir on Wednesday in the wake of the militant attack that killed four soldiers at Dera Ki Gali in Poonch on December 21 and subsequent death of three civilians due to alleged torture by the Army, met the families of the victims at Topa Peer village of Buzilaz and assured them of an "expeditious investigation into the incident, culminating in deliverance of justice".

Addressing troops in Rajouri, he directed them to win the hearts of the people while fighting terrorists. "We will eradicate terrorism. The Indian Ar-

my is not an ordinary Army. The soldiers are our protectors. It is their duty not only to safeguard national interests but also to win the hearts of the people," he said.

'Unfortunate deaths'

Terming the deaths "unfortunate", Mr. Singh directed all ranks to undertake operations based on hard intelligence, in accordance with established procedures aided by niche technology. "All commanders should have zero tolerance for violations of the well-established standard operating procedures," he said.

National Conference president Farooq Abdullah urged the Minister to ensure that such incidents did not recur. "The incident of civilian deaths



Duty calls: Soldiers are our protectors, Rajnath Singh said during an interaction with Army personnel in Rajouri on Wednesday. PTI

should not be repeated. It's good that the Defence Minister arrived here but the visit can't bring back the dead," the former Chief Minister said.

Mr. Singh complimented the local people for their steadfastness and contribution to joining the Union government's ef-

forts at bringing the Union Territory into the mainstream. "The unity in thought process, alignment and collective resolve for the good of the nation is the most important foundation for achievement of shared aspirations of peace & development in the Union Territory," he said.

Union govt. bans Muslim League J&K faction

The Hindu Bureau
NEW DELHI

The Union Home Ministry on Wednesday declared the Muslim League Jammu Kashmir (Masarat Alam faction) an "unlawful association" under the

Unlawful Activities (Prevention) Act for five years. Home Minister Amit Shah posted on X that the organisation is involved in secessionist activities.

FULL REPORT ON
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security forces' efforts to wipe out terrorism from J&K, Mr. Singh said, "I believe in your bravery and steadfastness. Terrorism should be finished off in J&K and you need to move forward with this commitment. I have full faith that you will achieve victory."

Spike in militancy

During his visit to Rajouri, he met senior officials to assess the security situation after the region witnessed a spurt in militancy.

The Pir Panjal region has witnessed six major encounters this year, which have resulted in the deaths of 21 armed forces personnel, including officers.

UNJUST AND UNWISE
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Mr. Singh said that there was a need to remain extra vigilant so that no untoward incident occurred in the future. "There should be zero tolerance to terrorism," he said. "Additional efforts are being made to bolster the security and intelligence framework," he added.

The Minister prayed for the speedy recovery of the Army personnel who sustained injuries. "Each of our Army personnel is important to us. Every soldier is like a member of our family. We cannot tolerate anyone looking down on our soldiers," he said.

Affirming his faith in the

Eurasian otter found in Chinnar sanctuary

The Hindu Bureau
THRISSUR

A team of researchers has discovered Eurasian otter (*Lutra lutra*) in the Chinnar Wildlife Sanctuary in Idukki, a first in Kerala.

The study was conducted by Srihari K. Mohan, Latish R. Nath, Subin K.S., and Srikumar K. Govindankutty under the guidance of P.O. Nameer, Professor and Head, Department of Wildlife Science, College of Forestry, Kerala Agricultural University.

This discovery of the Eurasian otter in the Western Ghats has added another member to Kerala's mammal list.

With this, there are three species of otters

found in Kerala, including smooth-coated otter and small-clawed otter. They are shy and nocturnal and found near small streams in the interior forests and hunt their prey during night, Dr. Nameer says.

The presence of the Eurasian otter in the Western Ghats was studied in the first half of the 20th Century by the Bombay Natural History Society's mammal census.

The studies detail their presence in Coorg in Karnataka, and Ooty and Kodaikanal in Tamil Nadu. However, after that no study in the Western Ghats has been able to officially prove their presence.

Hence, their presence in the Western Ghats after



Finally found: The Eurasian otter discovered at the Chinnar Wildlife Sanctuary in Idukki. SPECIAL ARRANGEMENT

1940 became a question mark.

After over 70 years, in 2017, the carcass of an otter was found at Valpara, in Tamil Nadu, run over by a vehicle.

DNA studies later

proved it to be Eurasian otter.

First official record

However, till date no pictures or official documents have been received from Kerala. This discovery

from the Chinnar Wildlife Sanctuary is the first official record of Eurasian otter in Kerala.

Moreover, after a long wait, they have been found alive in the Western Ghats, according to the research team.

The discovery of the Eurasian otter was published in the latest edition of the *International Journal of Threatened Taxa*. This article emphasises further research on Eurasian otter and detailed studies of their taxonomy, numbers, distribution, and behaviour.

The scientific article also discusses the need to protect the riparian forests in the higher elevations of the Western Ghats.

Jaishankar meets Putin, hints at resuming summits +

Suhasini Haidar

NEW DELHI

Hailing India-Russia relations as “very steady” and “very strong”, External Affairs Minister S. Jaishankar said on Wednesday that he was “confident” that the annual India-Russia leadership summit, which Prime Minister Narendra Modi and Russian President Vladimir Putin have skipped for two years, would be held in 2024.

“We will be glad to see our friend, Mr. Prime Minister Modi in Russia,” Mr. Putin told Mr. Jaishankar at a meeting in Moscow on Wednesday evening, official news agencies reported, adding that the Russian President discussed the situation in Ukraine in some detail with the Minister.

The meeting came after discussions with Foreign Minister Sergey Lavrov and Tuesday’s Inter-governmental Commission talks with Deputy Trade Minister Denis Manturov. The



On steady footing: S. Jaishankar and Sergey Lavrov exchange documents following their talks in Moscow on Tuesday. AFP

meetings have yielded a number of agreements on trade, connectivity, nuclear energy, military technology, and arms supplies.

Both sides say the visit has been marked by strong assertions on the importance of the bilateral relationship in a year where ties appeared to flag. “India-Russia relations remain very steady, remain very strong, they are based on our strategic convergence, on our geopolitical interests, and because they are mutually beneficial,” Mr.

Jaishankar said, addressing the media after his talks with Mr. Lavrov.

Mr. Jaishankar also discussed with Mr. Lavrov a bilateral investment treaty, and plans to resume talks for the Eurasian Economic Union-India Free Trade Agreement in the “second half of January”. Trade between the two countries has crossed \$50 billion in the past year, on the back of increased Indian imports of Russian oil and fertilizer in the wake of the war in Ukraine.

Ammonia leak from pipeline triggers scare at night; 52 admitted to hospital in Chennai

The Hindu Bureau
CHENNAI

After an oil spill triggered by the recent cyclone, Ennore in north Chennai was in for another shock as hundreds of residents woke up with burning eyes and faces and breathing difficulty after ammonia gas leaked from an underwater supply pipeline to a fertilizer plant late on Tuesday night.

M.E. Selvam of Periyakuppam said that around 10.30 p.m., people returning home from nearby industrial units could not



Lucky escape: Residents of the Periyakuppam fishing hamlet near Ennore in Chennai move to safety on Tuesday. B. JOTHI RAMALINGAM

take the beach road where the pipeline is located.

Hundreds of residents came out of their homes and were moved to safer

places. A total of 52 people were hospitalised. Teams from the police and fire services rushed to the spot to evacuate people willing

to move out. Residents of Chinnakuppam, Eranavur, Nethaji Colony and Nettukuppam too complained of uneasiness. After the industrial accident, the Tamil Nadu government ordered temporary shutdown of Coromandel International Ltd., the fertilizer plant. State Environment Minister Siva V. Meyyanathan said the unit had been directed to shut down until further orders.

The company, in a statement, said that as part of a routine operation, it noticed the abnormality at 11.30 p.m. in the ammonia

unloading subsea pipeline near the shoreside outside the plant. The ammonia system facility was isolated and the situation was brought to normalcy. Residents of Periyakuppam, who came back to their homes by Wednesday afternoon, sat on a protest demanding permanent closure of the company. Shobhana, a resident, said that if people had not been woken up in the middle of the night, many would have died in their sleep.

NGT SEEKS REPORT
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NGT seeks report on Ennore gas leak

The green tribunal took *suo motu* cognisance of the incident at a fertilizer manufacturing unit in Chennai and issued directions to the Tamil Nadu Pollution Control Board to file a report on the incident; case listed for hearing on January 2

The Hindu Bureau
CHENNAI

The Southern Bench of the National Green Tribunal (NGT) has taken *suo motu* cognisance of ammonia gas leak from Coromandel International Limited, a fertilizer manufacturing unit at Ennore in Chennai.

Citing media reports of several people from Periyakuppam, Eranavur and Burma Nagar experiencing breathlessness and irritation in their eyes and skin after leakage of ammonia from the gas pipelines of the unit, the NGT on Wednesday issued directions to the Tamil Nadu Pollution Control Board (TNPCB) to file a report on the incident.



Caught off guard: Officials inspecting the subsea pipeline of the unit in the wake of the ammonia gas leak at Ennore in Chennai. B. JOTHI RAMALINGAM

The case has been listed for hearing on January 2, 2024. The leak happened in the late hours of Tuesday. Many families in and around the site have evacuated their homes due to the effects of the leak.

During the TNPCB's inspection at 3.30 a.m., the

ammonia level in the air was found to be 3 ppm or 2,090 microgram/m³ as against the permitted 24-hour average of 400 microgram/m³. For four hours since 11.30 p.m. on Tuesday, the locals were exposed to extremely high levels of ammonia, possibly

far higher than the TNPCB estimates.

The Central Pollution Control Board (CPCB) categorises ammonia levels of over 1,800 microgram/m³ (24-hour average) as "severe". This may have acute respiratory effects, even on healthy people, and se-

rious health impacts on those with lung and heart diseases.

Meanwhile, Coromandel International Limited has suspended its Ennore port operations as it noticed an abnormality on Tuesday in the ammonia unloading subsea pipeline near shoreside.

In a letter to the Tamil Nadu Maritime Board, it said: "...Due to abnormalities noticed in the delivery pipeline of liquid ammonia on 26.12.2023, the next shipment (unloading) at our multi buoy mooring system terminal is cancelled...It will be brought into operation after rectification of abnormalities to the satisfaction and certification of concerned authorities."

Centre hikes copra MSP by ₹250-₹300 per quintal for 2024

The Hindu Bureau
NEW DELHI

The Cabinet Committee on Economic Affairs (CCEA), which met here on Wednesday, has decided to increase the minimum support price (MSP) for copra for 2024. The new MSP for milling copra will be ₹11,160 a quintal – an increase of ₹300 from the 2023 season.

The new MSP for ball copra will be ₹12,000 per quintal – an increase of ₹250 per quintal. The rate will be effective from next year. Briefing reporters after the meeting, Union Minister for Information and Broadcasting Anurag Thakur said that though copra prices had fallen globally, the Narendra Modi government had decided to pro-

vide an MSP of at least 50% higher than the production cost. "Accordingly, the copra MSP has been increased by ₹250-₹300 per quintal for 2024 season," Mr. Thakur said. According to a government release, the new rates would ensure a margin of 51.84% for milling copra, and 63.26% for ball copra.

Milling copra is used to extract oil, while ball/edible copra is consumed as a dry fruit and used for religious purposes.

Kerala and Tamil Nadu are major producers of milling copra, whereas ball copra is produced predominantly in Karnataka.

In 2023, the government has procured over 1.33 lakh metric tonnes of copra at a cost of ₹1,493 crore, the release said.

'Only 23 crore COVID-19 booster doses provided'

Health Ministry asks States to step up testing due to a recent spike in JN.1 COVID cases, but says no need for additional booster shots; 97% of eligible citizens got first dose and 90% second dose

Bindu Shajan Perappadan
NEW DELHI

A total of 220.67 crore COVID-19 vaccine doses have been administered across the country as on December 21 this year, show data released by the Health Ministry on Wednesday. However, only 22.88 crore precautionary or booster doses have been administered across the country among the eligible adult population.

The data also showed that over 97% of eligible citizens received the first dose of the vaccine, while over 90% received a second dose.

JN.1 cases spike

Despite the recent increase in number of people infected with the JN.1 COVID variant, the Health Ministry has ruled out the need for any additional booster or precautionary doses to be administered to the general public.

It has, however, issued a recent alert to the States asking them to step up testing and surveillance in preparation for any further surge in cases.



On alert: A health worker in PPE suit taking swab samples of a man for COVID-19 test at a centre in Visakhapatnam. K.R. DEEPAK

A total of 109 JN.1 COVID variant cases have been reported from across the country till December 26. According to sources, there have been 36 cases reported from Gujarat, 34 from Karnataka, 14 from Goa, nine from Maharashtra, six from Kerala, four from Rajasthan, four from Tamil Nadu, and two from Telangana.

India launched its national COVID-19 vaccination programme on January 16, 2021, starting by vaccinating healthcare and frontline workers and senior citizens, subsequently expanding to reach all citizens aged 12 and above.

"With the administration of 200 crore COVID

vaccine doses across the country on 17th July 2022, India achieved a significant milestone of administering over 100 crore doses of COVID vaccines to its eligible adult population in just nine months and another set of 100 crore vaccine doses have been administered in the next nine months, depicting sustainability," said the Ministry.

Under the National COVID-19 Vaccination Programme, three vaccines – Covaxin manufactured by Bharat Biotech International Limited, Covishield manufactured by Serum Institute of India and CorBEvax manufactured by Biological E. – have been made available.

Single-day rise of 529 virus cases across India: Ministry

Press Trust of India
NEW DELHI

India recorded 529 fresh COVID-19 cases in a single day, while the country's active infection count stood at 4,093, the Health Ministry said on Wednesday.

Three new fatalities – two from Karnataka and one from Gujarat – were reported in a span of 24 hours, according to the Ministry.

The number of daily cases had dropped to double-digits till December 5, but infections have again gone up after emergence of the new variant JN.1 and cold weather conditions.

The daily numbers were in lakhs at the peak of the pandemic, which began in early 2020 and has seen more than 4.5 crore people getting infected and over 5.3 lakh deaths in about four years since then across the country.

Making health our top priority in 2024

The 2023 Navaratri festivities in Gujarat were overshadowed by the news that 10 people had purportedly died of heart attacks in a span of 24 hours. What is even more disconcerting is that the victims ranged from a 13-year-old to middle-aged individuals, dispelling the myth that heart-related issues primarily afflict the elderly. This alarming trend is not just confined to Gujarat; it is found across the nation, marking a paradigm shift in India's disease burden. While communicable diseases persist as a significant threat, non-communicable diseases (NCDs) such as cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases have emerged as the predominant public health concern.

According to a World Health Organization (WHO) report titled 'Invisible Numbers', a staggering 66% of deaths in India in 2019 were attributed to NCDs. The report also suggests that 22% of individuals aged 30 or older in India would succumb to NCDs before their 70th birthday, surpassing the global probability of 18%. While the spectre of NCDs presents a challenge, the good news is it is never too late to invest in health. The fact is that NCD-led deaths are largely preventable, and the solution lies in the choices we make in our daily lives.

A quiet crisis

The silent epidemic of NCDs is fuelled by common behavioural risk factors – unhealthy diet, lack of physical activity, the use of tobacco and alcohol – which are all on the rise in India. This epidemic is further spurred by factors including a genetic predisposition towards conditions such as diabetes and heart disease, and a sedentary lifestyle, which also brings with it issues such as stress, anxiety, and depression. India bears the dubious distinction of being the diabetes capital with 101 million diabetics and 136 million with



Sathya Sriram
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Hospitals

The fact is that non-communicable diseases-led deaths are largely preventable, and the solution lies in the choices we make in our daily lives

prediabetes. Cardiovascular diseases top the mortality charts, and cancer incidence is projected to rise by 57.5% by 2040. This health crisis not only affects individuals but also poses a substantial economic burden. The World Economic Forum estimates that India could incur a staggering cost of \$4.58 trillion between 2012 and 2030 due to NCDs and mental health conditions.

A resolution for 2024

As India aspires to become a \$5 trillion economy by 2027, the growing incidence of NCDs is a pressing concern. While the government has launched initiatives such as the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke, and the 75/25 initiative, the onus now lies on individuals to take charge of their health. As we step into a new year, it is important that we choose to make health our top priority. While New Year resolutions are made only to be broken a few months later, this is one resolution that we can no longer afford to break.

Our health is determined by where we live, work, and engage in other activities, which brings in factors such as urban planning and environmental pollution that are sometimes beyond our control. However, what we can control is what we put in our bodies, how we move through the day, and how we stay ahead of illnesses by taking health check-ups regularly. What we can manage is our daily lifestyle, by making healthier choices, and this is where micro-habits – small, manageable actions that fit effortlessly into our daily routines – can make a difference.

First, we can integrate more natural movement into our daily lives. For instance, we can walk where possible instead of taking a vehicle. Just 30 minutes every day can increase cardiovascular fitness, strengthen our bones, reduce excess body fat, and boost muscle power and endurance

Second, we can choose 'slow food' over fast food. Food that is prepared with the ingredients that are right for us and food that is consumed with appreciation.

There is a connection between the food we eat and the health of our environment, our communities, and ourselves.

Third, we can take out a few hours once a year and get a comprehensive health check-up. We need to change our attitude from 'it's better not to know' to 'it's best for me to be proactive so that I can overcome it'.

Fourth, we can make health a dinner table and water cooler conversation. We ask our colleagues and loved ones about their day, their achievements, their plans, so why not ask what they did for their health? How much did they walk? Do they feel anxious? It is only by normalising this conversation can we truly stay one step ahead of health issues.

Winning the war against NCDs is not just vital for individual well-being; it's a decisive factor in safeguarding the health of the nation. By embracing sustainable healthy habits today, we commit to making healthier choices for 365 days and beyond. This resolution transcends personal improvement; it represents a collective dedication to shaping a healthier, more prosperous India.

A healthier nation

The power to transform the nation lies in the daily choices of its citizens, reflecting a profound understanding that the well-being of individuals directly impacts the well-being of society. In committing to Resolution 2024, we recognise that small, consistent actions, when multiplied across millions, can generate a seismic shift in the health landscape. It is a call-to-action resonating with the belief that the strength of a nation is rooted in the vitality of its people. As we embark on this journey towards a healthier India, we are laying the foundation for a brighter future for ourselves and for generations to come.

Will SLIM revolutionise lunar landings?

What factors contribute to SLIM's significantly lower weight compared to other lunar exploration missions, and how does this impact its mission objectives? How will SLIM affect what India and Japan are planning for their joint Lunar Polar Exploration mission?

EXPLAINER

Yasudevan Mukunth

The story so far:

At 1.21 pm IST on December 25, Japan's Smart Lander for Investigating Moon (SLIM) spacecraft entered into orbit around the moon after a months-long journey, and ahead of its planned moon-landing attempt on January 19. If the attempt succeeds, Japan will become only the fifth country to soft-land a robotic craft on the natural satellite, months after India succeeded with its Chandrayaan-3 mission in August. Perhaps more importantly, SLIM's success or failure will also affect the upcoming Chandrayaan-4 mission.

What is SLIM?

SLIM is a spacecraft built and launched by the Japan Aerospace Exploration Agency (JAXA) on September 7, 2023, from the Tanegashima spaceport. It weighed only 590 kg at launch, which is almost one-seventh of Chandrayaan-3, which weighed 3,900 kg at launch. Of course, the latter mission also carried a larger suite of instruments.

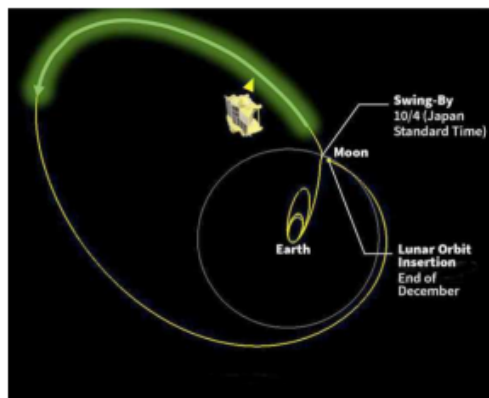
SLIM was launched together with XRISM, a next-generation X-ray space telescope, onboard an H-2A rocket. JAXA had planned to launch SLIM and XRISM together, so delays in readying XRISM pushed SLIM's launch date from 2021 to 2023.

On December 25, SLIM entered into an elliptical orbit around the moon over three minutes or so. Its apogee (farthest point) in this orbit is 4,000 km and perigee (closest point) is 600 km above the lunar surface.

Notably, JAXA launched SLIM only two weeks after the surface component of India's Chandrayaan-3 mission succeeded and Russia's Luna 25 spacecraft failed. SLIM will also mark the second Japanese attempt this year to soft-land on the moon: the HAKUTO-R M1 lander, built by Japanese company ispace, crashed in late April after its engines shut down too soon during the landing.

How did SLIM get to the moon?

SLIM is lighter because it carried much less fuel. Of Chandrayaan-3's 3.9 tonnes, the propulsion module alone weighed 2.1 tonnes. This is why the mission was launched on July 14 and could reach the moon less than a month later, by following a route called the Hohmann



A diagram illustrating SLIM's path from the earth to the moon, spanning four months. JAXA

transfer orbit.

On the other hand, SLIM took four months because it followed a longer but more fuel-thrifty route based on weak-stability boundary theory.

Once it was launched into an orbit around the earth, SLIM swung around the planet multiple times, building up its kinetic energy with each swing. Once it was travelling fast enough, it shot up towards the moon's orbit. Chandrayaan-3 followed a qualitatively similar path until this point.

Once it got close to the moon, Chandrayaan-3 applied its brakes - which consume fuel in space - so that it could slow down enough to be captured by the moon's weaker gravity. But once SLIM got near the moon, instead of slowing down and being captured by the moon's gravity, it allowed itself to be deflected in the moon's direction even as it shot past lunar orbit, deeper into space (see image above). This deflection is the result of the combined forces exerted by the earth and the moon. Physicists worked it out in the late 1980s for another JAXA mission, called 'Hiten'.

What will SLIM do on the moon?

SLIM was subsequently on a larger, more looping path that was designed to bring it back near the moon in December after it had slowed down further. This event happened on Christmas Day, followed by orbital capture the next day.

By sacrificing some time, SLIM could be more fuel-efficient.

All this said SLIM's standout feature is its reputation as the "moon sniper" - a title derived from what it will do on the moon on January 19: it will try to land within 100 metres of its chosen landing site. This is an unusually tight limit given the history of moon-landing missions. For example, the 'Vikram' lander of Chandrayaan-3 was designed to descend in an elliptical area that was 4 km long downrange and 2.5 km wide cross-range, and it eventually landed at a spot 350 metres away from a predetermined one. (Downrange means in the direction of the craft's motion and cross-range means to either side. In effect, these distances specify how much the craft's path can deviate in these two directions.)

NASA's hulking 'Curiosity' rover was tasked with landing at the centre of a 20 km x 7 km ellipse in Gale Crater on Mars on August 6, 2012, and it landed 2.4 km away. The most precise moon-landing in history was China's Chang'e 3 spacecraft: it landed 89 metres away from its chosen spot in the Mare Imbrium plain on the moon on December 14, 2013. However, it was still allowed to land anywhere inside an ellipse of 6 km x 6 km.

SLIM, in effect, will set the record on January 19 for attempting to soft-land with the smallest ever area tolerance on the moon. The chosen site is near the Shioli Crater, at 13.3° S and 25.2° E. Just as the

'Vikram' lander of the Chandrayaan-3 mission used data from the Chandrayaan-2 orbiter to help guide its descent, SLIM will use data from JAXA's SELENE orbiter, which ended in 2009.

Its lower mass - only 120 kg excluding fuel - will help in this endeavour by rendering it more manoeuvrable while its small size will be a test of its economical design.

Just before it lands, SLIM will deploy two small rovers called Lunar Excursion Vehicle (LEV) 1 and 2. LEV-1, LEV-2, and SLIM will together study the lunar surface near the landing point, collect temperature and radiation readings, and attempt to study the moon's mantle.

How will SLIM affect Chandrayaan-4?

Scientists are interested in the moon's South Pole region at large because parts of some of the craters here are always in shadow, allowing the temperature there to drop very low as well as sparing them the effects of sunlight and diurnal temperature variations. We already know these parts contain water-ice, and a lunar surface mission could potentially explore these sites and attempt to extract water.

When the Indian Space Research Organisation successfully executed its Chandrayaan-3 mission by soft-landing a robotic craft on the moon's surface, on August 23, it also concluded the second phase of its lunar exploration programme. The first mission of its third phase is the Lunar Polar Exploration (LUPEX) mission, a.k.a. Chandrayaan-4. LUPEX will be an Indian-Japan joint enterprise (however, while JAXA has approved LUPEX, India is yet to) with an earliest launch date in 2026. It will explore an area closer to the moon's south pole than Chandrayaan-3 did - and this makes all the difference.

The terrain near either of the moon's poles is rocky, pocked with several craters, and full of steep slopes. Axiomatically, if there is a suitable landing spot for a (relatively) large landing module or rover, its downrange and cross-range limits will be lower than they were for Chandrayaan-3. The craft will have to land as close to the site as possible, if not at the site itself.

The technologies JAXA will test with SLIM, but especially a feature-matching algorithm and navigation systems, will be crucial for this aspect of LUPEX. For now, JAXA is expected to provide the launch vehicle and the lunar rover while India will provide the lander module. The landing site is yet to be fixed; to compare, the 'Vikram' lander landed 600 km from the South Pole.

THE GIST

Japan's SLIM (Smart Lander for Investigating Moon) spacecraft entered lunar orbit on December 25, aiming for a moon landing on January 19, potentially making Japan the fifth country to soft-land a craft on the moon.

Weighing 590 kg at launch, SLIM is significantly lighter than India's Chandrayaan-3 (3,900 kg), emphasising fuel efficiency and carrying fewer instruments.

SLIM's journey to the moon utilised a fuel-thrifty route based on weak-stability boundary theory, taking four months compared to Chandrayaan-3's shorter Hohmann transfer orbit which took less than a month.

Set to land near the Shioli Crater, SLIM aims for an unprecedented precision landing within 100 metres, aided by data from JAXA's SELENE orbiter and deploying small rovers for surface analysis.

SLIM's success or failure will inform Japan's collaboration with India on the LUPEX mission, which will explore the moon's South Pole region and require precise landing technologies.

Indian banks' asset quality improved to decadal high: RBI

Banks' consolidated balance sheet grew 12.2% in FY23, highest in 9 years; about 45% reduction in GNPA came from recoveries, upgradations.

Lalitendu Mishra
MUMBAI

The Gross Non-Performing Assets (GNPA) ratio of Indian scheduled commercial banks (SCBs) consistently improved in the second quarter of FY24, sliding to a fresh decadal low, as per the Reserve Bank of India's (RBI's) report titled "Trend and Progress of Banking in India".

"The improvement in asset quality, measured by GNPA ratios, that began in 2018-19 continued during 2022-23," The RBI said.

"The GNPA ratio of SCBs fell to a decadal low of 3.9% at end-March 2023 and further to 3.2% at end-September 2023."

About 45% of the reduction in SCBs' GNPA during 2022-23 came from recoveries and upgradations.

The consolidated balance sheet of SCBs (excluding Regional Rural Banks) grew by 12.2% in 2022-23, the highest in nine years. "The main driver of this growth on the asset side was bank credit, which recorded its fastest pace of expansion in more than a decade."

During 2022-23, the combined balance sheet of commercial banks expanded in double digits, driven by sustained credit growth. Higher lending rates and

On a strong footing

Higher lending rates, lower provisioning needs boosted banks' profitability and shored up capital positions during 2022-23, says RBI



Combined balance sheet of UCBs expanded by 2.3% in 2022-23

■ UCBs' capital buffers, profitability improved

■ NBFCs also showed better profitability, asset quality in 2022-23

■ Capital to Risk Asset Ratio higher than the norms for NBFCs

lower provisioning requirements helped improve the profitability of banks and shored up the capital positions.

The capital to risk weighted assets ratio (CRAR) of SCBs was 16.8% at end-September 2023, with all bank groups meeting the regulatory minimum requirement and the common equity tier 1 (CET1) ratio requirement.

The combined balance sheet of urban co-operative banks (UCBs) expanded by 2.3% in 2022-23, driven by loans and advances. Their capital buffers and profitability improved through 2022-23 and Q1:2023-24, the RBI said.

NBFCs expand

The consolidated balance sheet of non-banking financial companies (NBFCs) expanded by 14.8% in 2022-23, led by double-digit credit growth.

"Profitability and asset quality of the sector also improved in 2022-23 and in H1:2023-24, even as the sector remained well-capitalised with Capital to Risk (Weighted) Asset Ratio (CRAR) higher than the regulatory requirement."

Looking ahead in 2024, the RBI said, in this environment, banks must guard against credit losses although higher capital buffers and provision coverage ratio (PCR) provide cushions.

"Qualitative metrics such as enhanced disclosures, strong code of conduct and clear governance structures would contribute towards financial stability," the RBI emphasised.

Stating the global environment remained highly uncertain, the central bank said the Indian banking system was well positioned to improve further.

Transition to EVs from petrol, diesel vehicles gained momentum in 2023

G. Balachandrar
CHENNAI

The electric vehicle (EV) industry started 2023 with a lot of optimism after a successful run in 2022.

The transition from petrol/diesel-powered vehicles to battery-powered vehicles gained momentum in 2023, and the year witnessed remarkable progress in technology, with electric vehicle OEMs coming out with newer models promising improved range and charging speed.

Govt. sops, awareness

Increased awareness about EVs and government incentives also played a role in driving sales. The electric-vehicle market will end 2023 with total sales of 1.5 million-plus units (all segments) when compared to 1.03 million units in 2022.

The electric two-wheeler (E2W) industry may close the calendar year with total sales of 8.5 lakh-plus units, translating into an impressive 35% growth over CY2022 volumes, but missing the target of 1 million projected by many.

Electric three-wheelers are expected to record significant growth at 5.8 lakh units in 2023 (3.5 lakh units in 2022).

The E2W industry may miss the target of 1 million units for 2023 projected by many, but it exhibited remarkable resilience in year amid setbacks due to reduced FAME subsidy.

Electric two-wheelers hit a speed bump in June as the Centre slashed the subsidy amount for E2Ws under the FAME II programme.

Effective June 1, the cap on FAME incentives for E2Ws was scaled back from 40% of the cost of an E2W



Dominant force: Despite competition, the top 10 OEMs account for 90% of the total sales in 2023. THULASI KAKKAT

to 15% of the ex-factory price of an E2W. This pushed up the retail price of E2Ws significantly, causing a decline in sales.

Affordable variants

However, the industry bounced back gradually, with E2W manufacturers managing to optimise product portfolio by launching more affordable variants with lower battery size for the new subsidy regime. The year was also a period of recalibration for start-ups in the E2W space as there were learnings for them to focus on a sustainable business, backed by a robust, revenue-generating model.

"Despite a competitive landscape with over 150 players, the top 10 OEMs remarkably account for 90% of the total sales in 2023. This concentration highlights the significance of market leadership and brand positioning in determining success in the electric two-wheeler market," said Suraj Ghosh, an automotive market analyst.

Ola Electric Mobility, which is planning to enter the capital market with an IPO, continues to assert its dominance in the market. Its strategic positioning and product offerings, in-

cluding the recently-launched S1 series, contributed to its strong show even in the post-subsidy reduction months.

TVS Motor, the second-largest E2W player, managed to hold an impressive share with a single product - iQube - emphasising the impact of focused offerings in the market. Its upcoming premium E2W - TVS - highlights the brand's focus on innovation in the space and its intent to expand its EV portfolio to boost sales and share.

Ather Energy's efforts to facilitate easy finance options for potential buyers boosted adoption in the E2W segment.

FAME subsidy

Meanwhile, it is still not clear whether the FAME subsidy will be extended beyond March 2024, though the Parliamentary Standing Committee on Industry has recommended a three-year extension.

In 2023, the Indian electric passenger vehicle market experienced a surge in the first 11 months, and is expected to close CY2023 with more than 80,000 units, reflecting a more than 110% increase over CY2022.

"Despite the higher in-

itial costs, a significant number of buyers are making the eco-conscious choice, driving the growth of the electric PV segment. Higher product availability of EV models on offer, relatively easier financing options, and high petrol costs are the other main drivers behind this growth," said Mr. Ghosh.

E-bus traction

The electric bus segment also witnessed healthy traction, driven by subsidy support via the evolving gross cost contract model, which helps significantly alleviate the upfront cost burden of cash-strapped State road transport undertakings. The Centre's PM e-BusSewa scheme, which aims at providing 10,000 e-buses to 169 cities under a public-private partnership (PPP) model, is expected to drive e-bus volumes.

Battery prices

Among other developments, such as the introduction of diverse product options and reduction in cell prices, an important development that 2023 witnessed was the adoption of a collaborative ecosystem approach.

"EV-makers, charging service providers, battery companies, and financial institutions forged partnerships to improve overall EV ecosystem. This trend is likely to continue strongly in 2024, says Varun Goenka, co-founder & CEO, Chargup, a leading battery-swapping network.

The Indian EV market is expanding dynamically with rejuvenated plans from most of the automakers and wider product offerings to woo buyers.

(The writer is with The Hindu businessline)

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