

Indian-made mRNA vaccine priced at ₹2,292, will be available as a booster dose

Jacob Koshy
NEW DELHI

India's first indigenously developed mRNA vaccine against the dominant Omicron variant of the COVID-19 coronavirus will cost ₹2,292, Sanjay Singh, CEO, Gennova Biopharmaceuticals, said at a press conference on June 24.

The vaccine will for now only be available as a booster or "precaution dose", that is, somebody who has already been vaccinated thrice will be ineligible as the relevant expert committees, which recommend vaccines for public administration, have not permitted companies to administer a fourth dose in India unlike, for instance, in the United States and Europe.

This price, however, is the retail price of the vaccine and the government currently has no plans to make a bulk purchase, as it



The vaccine will for now only be available as a booster or 'precaution' dose

did in the case of Covishield and Covaxin in 2021 that enabled these vaccines to be available free at government health centres. "We expect to make this vaccine available as a booster in private healthcare centres as well as export it to several international markets," Dr. Singh added.

Only mRNA vaccine

GEMCOVAC-OM is the only mRNA vaccine currently approved in India, under

"emergency use authorisation", that has been made specifically to counter the Omicron variant.

So far, only 28% of India's population has taken a third or precaution dose, and slackening demand for booster doses means that the existing vaccines are not easily available at health centres, either privately owned or government-run.

Monovalent vaccine

The mRNA vaccines manufactured by Pfizer and Moderna are 'bivalent', meaning they contain synthetic spike proteins that are effective against both the older Wuhan strain as well as the newer Omicron strains.

"The World Health Organisation's latest recommendation is very clear that a monovalent vaccine is the need of the hour and we have been able to produce that," Dr. Singh said.

1.83 lakh Olive Ridley hatchlings released into sea this year, says Forest Department

Geetha Srimathi
CHENNAI

As many as 1,83,497 Olive Ridley hatchlings were released into sea along the Tamil Nadu coast this year. The Tamil Nadu Forest Department has said that the number of sea turtle hatchlings released in 2022-23 was the highest in the last seven years.

Supriya Sahu, Additional Chief Secretary, Environment, Climate Change and Forests, said the Forest Department, along with volunteers and turtle conservation organisations, had set up 35 hatcheries across the State as against 22 last year. The increase in the number of hatcheries helped push up the number of hatchlings, she added.

The hatchlings released this breeding season, which lasts from January to



The number of hatchlings released into sea in 2022-23 is the highest in the last seven years, says T.N. Forest Department.

May, marked a rise from 1,72,339 in 2021-22. The count has been above the 1-lakh mark since 2017-18, when 1,21,289 turtles were recorded entering the waters, barring a sharp drop in 2019-20 when 60,789 hatchlings were released.

"The State will work on mapping areas that currently do not have hatcheries but are known to receive hatchlings," Ms. Sahu said, adding that the sea turtle conservation reha-

bilitation centre, which will be set up in Chennai, would also work towards capacity building for field staff workers.

Sea turtles are known to encounter a number of hurdles while making their way to the coast for breeding. One that has been highlighted is the threat of fishing gear in which sea turtles often get entangled. "We are working on a mechanism to incentivise removal of ghost nets, and



Forest Department, along with volunteers and turtle conservation organisations, has set up 35 hatcheries across the State as against 22 last year

SUPRIYA SAHU
ADDITIONAL CHIEF SECRETARY

the programme will begin before the upcoming breeding season," said Ms. Sahu.

Soaring temperatures, especially this year, emerged as a problem in maintaining the natural balance of sex among hatchlings, said Supraja Dharini of TREE foundation.

"Our hatcheries had a 95% hatchling emergence rate as we maintained temperature around 30-32 degrees Celsius," she said.

Idol Wing steps up efforts to retrieve 16 idols from the U.S.

Assistance under the Mutual Legal Assistance Treaty has been sought for their repatriation; the idols were stolen or went missing from four Chola-era temples in T.N. and traced to American museums

R. Sivaraman
CHENNAI

The Idol Wing-CID (IW-CID) of the Tamil Nadu Police, with the assistance of U.S. authorities, has taken a major step towards retrieving 16 high-value antique idols that were stolen or went missing from four Chola-era temples in the State and were recently traced to museums and art galleries in the U.S.

Shailesh Kumar Yadav, Additional Director-General of Police, IW-CID, told *The Hindu*, "We are in touch with the U.S. authorities, including Homeland Security and the Manhattan District Attorney's office, to bring the idols back. Soon, they will be returned to the temples." The idols were taken from the Veeratteswarar Swami Temple at Korukkai village, Mayiladuthurai; the Nareeswarar Temple at Veeracholapuram village, Kallakurichi; and the Venugopala Swami and Viswanatha Swami Temples at Alathur village, Mannarkudi.

Mr. Yadav said, "Our investigation officers have vi-



High-value idols: Some of the idols that were stolen from the Nareeswarar Temple at Veeracholapuram in Kallakurichi district.

sited these temples and examined the details. After gathering evidence/documents pertaining to the stolen idols, we forwarded them to the agencies concerned for further action through Indian authorities in the U.S. We learnt that they have located the whereabouts of the items." The investigators approached the French Institute of Pondicherry to gather the photos of the idols documented there. After obtaining the pictures, the IW-CID formed special teams to search for the pieces at mu-

seums/art galleries worldwide.

They located the idols resembling the missing ones on the display shelves of museums and art galleries in the U.S. The police said six exquisite Chola-era bronzes – Shiva, Parvathi, Nataraja, Sundarar and Paravai Nachiyar, Veenadhara/Dhakshinamurthy and Nandikeshwarar – that went missing from the Veeracholapuram Sivan temple in the 1960s were spotted at the Cleveland Museum and Christie's Auction House. In 2007, an

employee of the Hindu Religious and Charitable Endowments Department, Mannargudi, lodged a complaint with the Vikrapandiyam police station in Tiruvarur, alleging that three metal idols – Vishnu, Sridevi and Bhudevi – belonging to the Venugopala Swamy Temple, which were in another temple's custody for safekeeping, had been stolen. It was also found that the three idols had been replaced with replicas at the time of the theft.

Six more idols were stolen from one of the temples several years ago. The IW-CID traced these idols, which were displayed at Los Angeles County Museum of Art, the Nelson-Atkins Museum of Art in Kansas City, Missouri, the Norton Simon Museum, Christie's Auction House, Freer Sackler and the Metropolitan Museum of Art. Mr. Yadav said: "These temples are ancient and the idols that were stolen are of high value. We have sought assistance under the Mutual Legal Assistance Treaty through the Union government for repatriation of these idols."

T.N. govt. negotiating with NCCF and other States to procure more rice

T. Ramakrishnan
CHENNAI

With the Food Corporation of India (FCI) reiterating its position of not providing more foodgrains to States under its Open Market Sale Scheme (OMSS), the Tamil Nadu Civil Supplies Corporation (TNCSC) is negotiating with the National Cooperative Consumers' Federation of India (NCCF) and other States to procure the additional quantity of rice - 50,000 tonnes to 60,000 tonnes a month - that it needs.

While the NCCF has quoted a price of ₹35.45 per kg of rice, the TNCSC is awaiting a response from States such as Andhra Pradesh, Telangana and Chhattisgarh on their prices. "As soon as we get the quotes from the others too, we will send a proposal to the government," said an



At present, the State has 5.4 lakh tonnes of rice in its godowns. FILE PHOTO

official. The State plans to get six lakh tonnes of rice to meet its requirements for the next 10 months. The monthly allocation by the Centre to Tamil Nadu is approximately 2.97 lakh tonnes of rice for the public distribution system (PDS) under the National Food Security Act (NFSA). In addition to this, the State needs 50,000 tonnes to 60,000 tonnes per month as it has over 2.2

crore rice-drawing ration cards.

One of the routes used by the State traditionally to meet the shortfall is purchasing from the FCI under the OMSS. At times, other sources have also been tapped. Five years ago, the State had purchased rice from the NCCF and other States.

Recently, between December 2022 and March 2023, it bought 3 lakh tonnes from the NCCF. This time, the NCCF has conveyed that though it is agreeable to supply rice at the previous year's rate of ₹35.45 per kg, it will deliver the grain at the railhead of the district headquarters, from where the TNCSC has to transport it to godowns. Last year, the NCCF supplied rice at the doorstep of godowns. Consequent to the NCCF's change of plan, the local transporta-

tion cost will be ₹0.5 per kg, increasing the procurement cost to ₹35.95 per kg. The TNCSC also has the option of retaining paddy procured from farmers in the State for itself instead of contributing it to the Central pool.

This arrangement is allowed as Tamil Nadu is one of the Decentralised Procurement (DCP) States. During the Kharif Marketing Season 2022-23, 7 lakh tonnes was retained by the State for local requirements. By September or October, when the harvest of the *Kuruvai* season takes place, the stocks of the TNCSC will get replenished.

At present, the State has 5.4 lakh tonnes of rice in its godowns. Besides, around 1.9 lakh tonnes is available with millers, which will eventually be available for the PDS.

Modi reaches Cairo; to meet with President El Sisi and the Grand Mufti

The visit acquires significance as it is taking place just days after Prime Minister wrote to his G-20 counterparts to expand the grouping by including the African Union, of which Egypt is a leading member; two sides expected to firm up ties

Kallol Bhattacharjee
NEW DELHI

Prime Minister Narendra Modi on Saturday reached Cairo, beginning his first state visit to Egypt. The trip comes five months after President Abdel Fattah El-Sisi visited India as the chief guest at the Republic Day celebrations.

"PM Modi will meet with the India Unit of the Egyptian Cabinet," Arindam Bagchi, official spokesperson of the Ministry of External Affairs, said in an official broadcast from the Cairo airport. The India Unit is a special group of senior Egyptian Ministers that has been created by President El-Sisi to enhance bilateral ties with India.

The visit acquires significance as it is taking place just days after Mr. Modi wrote to his G-20 counterparts to expand the grouping by including the African Union, of which Egypt



Prime Minister Narendra Modi being received by Egyptian Prime Minister Mostafa Madbouly. PTI

is a leading member.

In a special gesture, the Prime Minister of Egypt, Mostafa Madbouly, received Mr. Modi at the airport on Saturday. "I thank Prime Minister His Excellency Mostafa Madbouly for the special gesture of welcoming me at the airport. I hope that the Indo-Egyptian relations will

flourish for the benefit of our two nations," Mr. Modi said in a message soon after landing at the Egyptian capital on his way back from Washington DC.

Apart from meeting with the Indian community in Cairo, Mr. Modi on Saturday will also meet with the Grand Mufti of Egypt, Shawki Allam, who has of-

ten spoken against terrorism. The Grand Mufti of Egypt visited India in May as part of the the Indian Council for Cultural Relations (ICCR) Distinguished Visitors Programme. During his tour, the Grand Mufti visited Jaipur, Agra, Hyderabad and Delhi and Aligarh Muslim University. The Grand Mufti has in the

past condemned terror attacks, including the 2016 Brussels bombings.

On Sunday, Mr. Modi will visit the Al Hakim Mosque, which has a rich history of about a thousand years. The mosque was renovated with assistance from the Dawoodi Bohra community, which has in the past honoured Mr. Modi by hosting him at their events. Mr. Modi had described the community as "the nation's backbone" in 2018.

Mr. Modi will also meet leading intellectuals of Egypt.

Mr. Modi will meet President Abdel Fattah El-Sisi on Sunday in Cairo, and both sides are expected to firm up relations across multiple areas, including renewable energy and infrastructure.

In keeping its growing importance to India's global plans, Egypt will be a "guest country" at the G-20 summit in Delhi.

The role of the Y chromosome in cancer outcomes studied

The Hindu Bureau

Two studies have shed light on the role of the Y chromosome in cancer outcomes, in which males are often more adversely affected than females. The results of the studies were published in *Nature*.

One paper identified an upregulated gene on the Y chromosome that contributes to colorectal cancer in mice by driving tumour invasion and aiding immune escape in males. The

other study demonstrated how the loss of the Y chromosome in bladder cancer generates a more immunosuppressive tumour microenvironment and contributes to worse outcomes. Sex is known to affect cancer incidence, clinical outcomes and tumour biology, with most cancers causing worse outcomes in males than in females. Some studies have suggested that the function of the Y chromosome may have a role.

Ronald DePinho from the University of Texas MD Anderson Cancer Center and colleagues assessed sex differences in colorectal cancer in a mouse model of the disease.

Colorectal cancer is the second most common cause of cancer-related deaths, which is more aggressive and metastatic in males. The model is a specific form of the disease, driven by a known oncogene called KRAS. The researchers observed a higher fre-

quency of metastasis and worse survival in male mice, mirroring the outcomes seen in humans.

Analyses reveal upregulation of a gene for an enzyme which drives tumour invasion and immune escape.

This gene is expressed on the Y chromosome, thereby providing a potential basis for sex-specific differences in the progression of KRAS-driven colorectal cancer. In an other study, Dan Theodorescu from Ce-

dars-Sinai Medical Center, Los Angeles and colleagues investigated how the loss of the Y chromosome might affect cancer outcomes.

Loss of the Y chromosome is a feature observed in multiple cancer types.

They first looked at clinical data from 300 male patients with bladder cancer to identify an association between Y chromosome loss and poor prognosis.

They studied bladder cancer cell lines and found

that tumours lacking the Y chromosome were more aggressive and had a dampened T cell-mediated immune response compared with tumours which had the Y chromosomes intact.

They note that loss of the Y chromosome is associated with an increased response to a specific type of immunotherapy called anti-PD1 checkpoint blockade therapy in both mice and humans, suggesting a potential treatment for this subset of bladder cancers.

Miyawaki urban forest taking shape around Red Hills reservoir

Water Resources Department ropes in voluntary organisations to increase the green cover; nearly 55 native species of saplings planted

K. Lakshmi
CHENNAI

The Red Hills reservoir, a main source of the city's drinking water supply, is steadily gaining patches of green cover around it.

In concerted efforts, the Water Resources Department, along with voluntary organisations, is developing Miyawaki urban forests on land retrieved from encroachers.

The initiative is being undertaken at the rear side of the lake and near the intake tower at Surapet, where nearly 55 native species of saplings have been planted. Officials recalled that encroachments were removed two months ago on five acres of land at Surapet. The green cover would protect the ecology of the reservoir and improve biodiversity.

Voluntary organisations and volunteers are encouraged to develop and maintain greenery in at least four places on the periphery of the lake. The department has about 600 encroachments to be cleared and plans to create a green belt on the land and develop it as an eco-tourism site.

S. Sameer of the Social Work Team Trust



Green cover: A worker tends to the saplings on the land around the Red Hills reservoir. M. VEDHAN

(SWOTT), engaged in reservoir restoration, said about 5,800 saplings, a mix of shrubs and canopy trees, had been planted at Surapet along with Say Trees, an NGO. Another 6,000 saplings are planned in second phase.

Another urban forest is being developed near the bund on G.N.T. Road and at Alamaram as well. About 20,000 seed balls had been planted. However, garbage dumping and sewage pollution continues in the lake. There is a need to construct flood protection wall along a stretch of Baby canal to stop encroachments and sewage outfalls near Padianallur. The surplus canal has encroachments near Naravarikuppam, Mr. Sameer said. While efforts are on to increase green cover around

the lake, activists want sewage pollution to be arrested. They said the Chennai Metropolitan Development Authority's ₹100-crore proposal to execute lakefront development in 10 lakes, including Red Hills, remains a non-starter.

S. Sundaramurthy, president, Puzhal Eri, Arafat Eri Padhukappu Makkal Iyakkam, said sewage pollution and encroachments continued near the lake despite inspection by Avasi Corporation officials.

"We have completed 60% of work along with Exnora International to clean water hyacinth near Thirumullaivoyal. These steps will be of use only if sewage outfalls from Thirumullaivoyal and Venkateswara Nagar in Ambattur are plugged," he said.

How prokaryotes led to eukaryotes



**SPEAKING OF
SCIENCE**

D. Balasubramanian

Organisms on planet earth are broadly divided into prokaryotes and eukaryotes. The former are unicellular, do not have any organelles such as mitochondria, and their DNA is not packaged into a nucleus.

Eukaryotes have mitochondria, their DNA is packaged into a nucleus, and most of them are complex, multicellular beings.

About 50 years ago, a subset of unicellular organisms, the Archaea, were shown to have a different line of descent as compared to bacteria. The two differ in the composition of their cell walls, and in the sequence of some of their genes. The term Archaea, was used because the first members of this domain were

found living in extreme environments of very high temperatures or very high salt.

The endosymbionts

One group of archaea were shown to have proteins that closely resembled eukaryotic proteins. These organisms are found in a geological formation where geothermally heated water is forced out of a ridge in the Atlantic Ocean floor at a depth of 2400 meters below sea level.

Many other related members were later found in unusual ecosystems, and came to be collectively called the Asgard, which is the home of the Gods in Norse mythology.

The mitochondria, which are the energy-generating organelles of eukaryotic cells, and the photosynthesizing chloroplasts found in plant cells, have evolved from free-living bacteria.

The ancestor of mitochondria was a proteobacteria that was engulfed by an Asgard archaean organism. Descen-



The origin: Mitochondria in eukaryotic cells and chloroplasts in plant cells have evolved from free-living bacteria. GETTY IMAGES/ISTOCKPHOTO

dants of this endosymbiotic union gave rise to animals, fungi and plants.

In plants, the Asgard-mitochondrial union was followed by the intake of a photosynthesizing cyanobacterium, which became the chloroplast.

A few years ago, we Indians had seen complicated mergers of public-sector banks, brought in order to optimize their operations.

In a similar vein, establishing a workable symbiotic rela-

tionship between two independent life forms poses many challenges.

Plants do it differently

There was no need to retain two full sets of genes, so choices were made: for Information Technology (cell replication, etc.), archaean genes were retained; for operations and housekeeping (assembling proteins), bacterial genes were preferred.

Over time, most genes of the organelle were transferred

to the nucleus, perhaps a more efficient arrangement.

The group of Rajan Sankaranarayanan at the CCMB has performed extensive studies on the reconfiguring of cellular processes in these endosymbiotic relationships. They compared animals and fungi with plants, where it is even more complicated as three gene sets were involved in the course of their evolution.

Proteins are made up of amino acids. Nature uses only left-handed amino acids; the right-handed ones can be poisonous. The mechanism for discriminating 'good' from 'bad' is different for Asgards and bacteria. The paper shows that animals and fungi work their way around this discrepancy by forcing the mitochondria to change. Plants segregate the two policing machineries in the cytoplasm and in mitochondria.

(The article was written in collaboration with Sushil Chandani, who works in molecular modelling)

Why is U.S.-India fighter jet deal important?

With General Electric and Hindustan Aeronautics Limited signing a memorandum of understanding to co-produce F414 engines in India, how will it boost IAF strength? Will the U.S. government and Congressional approvals come through for the deal?

Dinakar Peri

The story so far:

Coinciding with Prime Minister Modi's first state visit, India and the U.S. have announced a slew of deals in defence cooperation, space technology, AI and other areas. The U.S.-India joint statement mentions the "landmark" signing of a Memorandum of Understanding between General Electric (GE) and Hindustan Aeronautics Limited (HAL) for the manufacture of GE F414 jet engines in India, for the Light Combat Aircraft (LCA) Mk2. A fact sheet issued by the U.S. said a manufacturing licence agreement has been submitted for Congressional notification.

What is the status of the deal?

A senior Defence Ministry official said it is an "almost done" deal with some commercial terms pending finalisation, in addition to the U.S. Congressional approval, while stating that there would be an 80% transfer of production technology which will see some critical technologies transferred to India.

"It will take three years for the first engine to roll out once the contract is signed. It will see 80% technology transfer to HAL. Such a thing has never occurred before in the history of India's quest for high technology," the official said. Except for a small component, the F414-INS6 engine will be entirely manufactured in India which also shows the trust India has evoked in the U.S., the official stated.

The U.S. has stringent export controls and

Except for a small component, the F414-INS6 engine will be entirely made in India

licensing systems for sharing sensitive and niche technologies. The final deal can be concluded only after the U.S. Congress approves it, though with the bipartisan support for India at the Congress, officials on both sides have expressed confidence that it will go through.

Why is it significant?

If the deal goes through, it will mean transfer of almost the entire engine technology compared to the 'Engine Development Agreement' worked out in 2012 between GE and HAL for the F414 engine with 58% technology transfer, officials said. This heralds a major high technology cooperation between the oldest and largest democracies, which the U.S. has shared with only its closest allies.

While the most critical technologies of the engine will be off limits, Indian industry, both public and private, will get a chance to upgrade their capacities and skills as significant sourcing as well as manufacturing will be done in the country, with the technologies that GE has agreed to transfer.

What is the status of indigenous tech development?

Jet engine technology is the proprietary right of very few countries and is a closely guarded secret due to its extreme criticality in modern warfare. India made unsuccessful attempts in the past to develop an engine locally under the now shelved 'Kaveri' project. The Kaveri project was sanctioned by the Cabinet Committee on Security (CCS) in 1989, and over the course of 30 years before it was shut down it entailed an expenditure of ₹2035.56 crore which led to the development of nine full prototype engines and four core engines.

Where will the GE engines be fitted?

The F414 engines are meant to power the indigenous LCA-Mk2, a larger and more capable variant of the LCA currently in service, and also the initial version of the fifth generation Advanced Medium Combat Aircraft (AMCA) that is under development. The F414 is from the family of the F404 engine that powers the current LCA-Mk1 and also the LCA-Mk1A that the Indian Air Force (IAF) will start receiving early-2024 onwards. An F414 engine produces 98kN thrust compared to 84kN by the F404 engine.

Last August, the CCS approved the development of the LCA-Mk2 at a total development cost of ₹9,000 crore of which ₹2,500 crore has already been spent. The rollout of the LCA-Mk2 is targeted by 2024 and the plan is to complete the flight testing by 2027, officials

from the Defence Research and Development Organisation (DRDO) had stated earlier. The CCS sanction for the AMCA is expected soon.

The LCA-Mk2 will feature enhanced range and endurance including an Onboard Oxygen Generation System which is being integrated for the first time; it will also have the ability to carry heavy weapons of the class of Scalp, Crystal Maze and Spice-2000. The Mk2 is 1,350mm longer than Mk1 featuring canards and can carry a payload of 6,500kgs compared to 3,500kgs by Mk1.

The F414 also powers the F/A-18 Super Hornet and Swedish Gripen among others. According to a GE data sheet, the F414 shares its basic design with the F404 engine; it stands on a foundation of over 5,600 F404/F414 engines built, and a combined 18 million engine flight hours. More than 1,600 F414 engines have been delivered, accumulating over five million engine flight hours, it stated. This deal makes GE the front runner for another Indian proposal to jointly produce a 110kN jet engine for the AMCA-Mk2 for which Safran of France and Rolls Royce of the U.K. are competing and have submitted detailed technology transfer proposals. In this regard, GE said it will continue to collaborate with the Indian government on the AMCA Mk2 engine programme.

What is the timeline for production and delivery?

According to GE, a total of 75 F404 engines have been delivered and another 99 are on order for the LCA Mk1A, while eight F414 engines have been delivered as part of an ongoing development programme for LCA Mk2.

The F414 engine has been long chosen to power the LCA Mk-2, which has been designed around the engine, making it a larger, heavier and more capable jet, equal to the Mirage-2000 in terms of capability, as stated by officials earlier. The IAF has ordered 40 LCA Mk1, most of which have been inducted, and 83 LCA-Mk1A, on order under a ₹47,000 crore deal with HAL. As per schedule, HAL is expected to deliver the first three Mk1A aircraft in 2024 and 16 aircraft per year for the subsequent five years completing the deal by 2028-29.

The LCA-Mk2 is a major fillip for the IAF to arrest the dwindling fighter squadron as several frontline fighters like Mirage-2000, Jaguars and MiG-29s will be phased out by the end of the decade. The three existing MiG-21 squadrons will also be phased out by end-2025. The strength of India's fighter squadron is 31 now from a sanctioned strength of 42.

While the number of Mk2 jets are yet to be approved by the Defence Acquisition Council (DAC) headed by the Defence Minister, it is expected to be between 120 and 130 fighters, according to officials. With the combined requirement, the number of F414 engines needed over the next two decades could be well over 200.



Major haul: Prime Minister Narendra Modi at the 14th edition of Aero India 2023, in Bengaluru on February 13. PTI

A missing letter means no work

Mismatch between names on MGNREGS job cards and Aadhaar leaves many workers jobless; deletion of names from beneficiary list on the rise

Sobhana K. Nair
RAYAGADA (ODISHA)

Sugrib Naik, 29, and Singi Majhi, 59, are a generation apart and have never met. They have nothing in common except, recently, both their names were struck out of the beneficiary list under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS).

In both the cases, there is a mismatch between their names on the MGNREGS job cards and their Aadhaar card. A missing letter and a differently spelt name were enough to push both to a common destiny – migration to earn a living.

By an order on January 30, the Union Rural Development Ministry made it mandatory that the payment of MGNREGS wages will be Aadhaar-linked. The initial deadline was set for February 1, which, after two extensions, is now set for June 30. As States rush to meet this deadline, the number of deletions is spiralling.

By June 23 this year, names of 61 lakh registered workers had been deleted citing various reasons ranging from unwillingness to work to fake job cards, amounting



By June 23 this year, names of 61 lakh registered workers had been deleted. LAKSHMI NARAYANAN E

to net deletion of 1.16%. This amounts to 2.26% of the total registered workers. According to an analysis by research group Lib Tech, financial year 2022-23 saw a 244.3% hike in the number of deleted workers. From 1.49 crore deletions in 2021-22 with a net deletion of 1.8%, it climbed to 5.13 crore in 2022-23 with a net deletion rate of 14.28%. The government claims this is a routine exercise to weed out corruption.

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A missing letter means no work in Odisha

The Hindu's field visit to Kashipur Block in Rayagada district of Odisha shows that many genuine beneficiaries have been binned in this process. Kashipur Block has a significant Adivasi population and has reported one of the highest MGNREGS deletion rates in the country.

Mr. Naik, a tribal from Dangehskal village in Kashipur Block, while looking for work recently discovered that his job card was no longer in the system. Out of the 547 registered MGNREGS workers in the village, 90 have been deleted. Likewise, 33 workers' names have been removed citing the reason "not willing to work".

"Who told them that I am not willing to work? No one came to ask me whether I want or do not want to work," Mr. Naik said.

In Tikirapadar village, Singi Majhi, a tribal has a similar story. The village is nearly three kilometres away from the main road. In his job card, Mr. Majhi's name has been spelt as 'Singa Majhi' while the Aadhaar card records it as 'Singi Majhi'. He stands staring at each document by turn in dismay. The reason for the deletion of his name, according to the website, is "incorrect job card". With no credible livelihood option available, his son Bhishanta, who got married just four months back, left for Kerala, leaving his 20-year-old bride Abita behind.

"There is no money here, what can he do? He had to leave for Kerala," Ms. Abita said. Her cellphone is the only connection between them. But she has to trek two kilometres for conversations.

When *The Hindu* reached out to the Block-level officials, they conceded there were issues. "Even if we know it is the same person, we cannot edit their names on the job cards to match that with the Aadhaar card," an official said.

Academicians and activists also acknowledge the issue. "Our research indicates two trends in MGNREGS's mandatory Aadhaar requirement. Certain States face workers' unresolved Aadhaar issues, leading to work denial or payment delays. States with fewer issues experience higher deletion rates. Lower-level officials lack training to address challenges, often resorting to deleting names as a quick solution to meet targets," Chakradhar Budhha, a senior researcher at LibTech India, said.