

Mystery shrouds migrant numbers

Private surveys estimate that 30-35 mn returned home

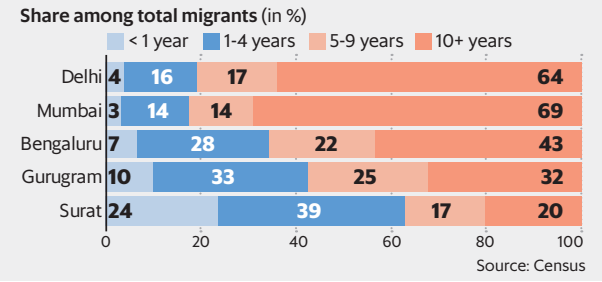
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NEW DELHI

There is little clarity on the number of state-wise returnees and on the migrant population who stayed back at their workplaces, more than two months after the reverse migration of India's floating workforce began from across the country. Finally, on Tuesday, the Supreme Court set a 15-day deadline to states to facilitate the return of all migrants who remained stranded. "At least 4 million inter-state workers are still stuck," said Amitabh Kundu, a fellow at Delhi-based think tank Research and Information System for Developing Countries. Kundu is one among many researchers who are attempting to estimate the scale of the reverse migration. Several private surveys now broadly converge, estimating that 30-35 million had taken the arduous journey home. "The exodus has been even bigger than what we witnessed during the Syrian war," said Priya Deshingkar, a professor of migration and development, University of Sussex. According to official records, about 12 million travelled in state-run buses and trains, and another 2 million were at halfway homes. In effect, the government was able to assist about 30% of those who needed help. The bigger worry, however, is that more than 30 million people, a significant chunk of the labour force, have almost remained invisible to governments.

MINT GRAPHITI

New migration trails

Delhi and Mumbai's migrants largely belong to earlier waves from the 1980s and 90s. Gurugram and Surat are new migrant corridors.



"India desperately needs a large-scale migration survey," said Deshingkar. "The very fact that people are trying to find estimates beyond the National Sample Survey (last captured work-related migration in 2007) and the Census (of 2011) shows there is a gap." Some elementary errors were also made because of the lack of relevant data. An obvious way to prioritize the railroads' services over the past few weeks would have been to target districts with a large number of short-duration, long-distance migrants, who were generally more vulnerable and poorer. However, there was little relevant, real-time data available to identify the target group. There was also enough indication that India's migration pathways were shifting. Gurugram and Surat, for instance, have a greater proportion of short-term or "new" migrants,

who stayed in the city for less than a year, than Mumbai or Delhi. In May, more migrant workers boarded trains from Gujarat than Maharashtra, a state twice as populous. "It's all complicated and we know little about migration flows," said Benoy Peter of the Kerala-based Centre for Migration and Inclusive Development, an independent non-profit that advocates for and promotes the social inclusion of migrants and other socially disadvantaged populations. Even in a state such as Kerala, which has made efforts to register migrants to extend basic social security, only one-fourth of the estimated 2.5 million workers were accounted for. "India's development trajectory shows migration is only going to increase. We need to reduce distress migration and improve safe migration. Migration should be an informed choice," Peter said.

According to official records, about 12 mn travelled in state-run buses and trains; 2 mn were at halfway homes

CORONA BATTLE: BIOLOGY TURNS TO MATHEMATICS



A MATTER OF NUMBERS
DILIP D'SOUZA

Respond to this column at feedback@livermint.com

No doubt you've seen the cartoon depiction of the novel coronavirus: A big ball, usually red, with numerous projections sporting what seem like suction cups on their ends. Like one of those toy balls you can throw it at a wall and it sticks there. I don't know if this is at all an accurate representation of the virus, but maybe that doesn't matter. What we do know is that the projections stand for so-called "spike proteins", and it is these proteins through which the virus attacks and invades other cells. In a sense, they are the weapons that the virus carries to war, wielding them as it moves through its surroundings in search of vulnerabilities to exploit, thus people to infect. Think of battles you've heard of, in which an army finds and bursts through some weakness in an enemy formation. The virus operates similarly. It uses spike proteins to bind to "receptor" proteins on the cells it encounters. Once that happens, it's like the virus has opened a door into the hapless cell. Now, troops pour through the door and they begin infecting this new host—in our case, that person you know or have read about who has "caught" the virus and needs treatment. Too anthropomorphic a picture for you? Maybe so. But it helps us focus on what we need to do to battle this virus. For just as these spike proteins are the virus's sweeper patrols, opening up new routes to infections, they also seem to corona researchers to be the virus's Achilles heel. They figure that if they can find a way to stop the spike proteins from binding to receptor proteins, they will have neutralized the virus. That's easier said than done, admittedly. But crucial to this effort is to understand the structure of the spike protein—what it looks like. Again anthropomorphising: If you want to stop an invasion, it helps to know the nature of the beast—the size of those patrols, their command structure, how they move and behave, etc. In February, researchers were able to put together a "blueprint" of the spike proteins, meaning a 3D representation of the structure of the protein molecule. Now they know, if they encountered such a molecule, where in it to look for each of its atoms, and how those atoms are connected to each other. The task that remains, then, is to identify the weak points in this structure. We know that the proteins change shape substantially when they bond to receptors. Do those changes happen because of unstable or weak points in the molecular structure? Can we identify them? That is, which atoms, or which bonds between atoms, are vulnerable to attack by whatever

drug we might invent for the purpose? It's a good question to ask. Because if we do manage to hit the virus at those weak points, perhaps we will have damaged its ability to bond to receptor proteins. In essence, this is the framework for the ongoing search for a vaccine against the virus. In just the last few weeks, we've had reports of progress towards finding the weak spots from an unexpected angle: Mathematics. Robert Penner is a mathematician at France's Institute of Advanced Scientific Studies. He decided to look for spots of high energy on the protein molecule. His rationale was that these "high free energy sites" are likely to be weaker than elsewhere on the molecule. (Anthropomorphising one last time: You have to enter a building guarded by two men. One is jumpy, nervous and talkative. The other is stolid and silent. Which one would you assume is more amenable to persuasion?) But how do we locate these spots? Considerably simplified, it goes like this. Penner examined the bonds between atoms in the protein molecule. As the virus finds and binds to a receptor, the shape of the protein changes—and with this transformation, these bonds rotate around each other. How much they rotate depends on how much energy they have to begin with. So the search for high-energy spots, in effect, a search for specific degrees of rotation. Now if while trying to find biological answers, we start looking at these rotations, we are really looking at geometry. We are in entirely mathematical territory. We've converted a problem in biology into one in mathematics, and that itself might produce answers we would not otherwise have come upon. This is often how science progresses, and this was Penner's motivation. In the 19th Century, the great German mathematician Carl-Friedrich Gauss gave us a way to describe a rotation: Specify its axis and the amount of the rotation. What does this mean? Let's say you're running laps around the local cricket stadium—that is, we might say you're "rotating" around its centre. You call your husband to tell him what you're doing. "I'm running on the track at Brabourne Stadium," you say, and he immediately visualizes the loop of the track and thus its axis, which is an imaginary pole stuck in the centre. But he also wants to know exactly where on the track you are as you speak. "45 degrees," you might say. That is, imagine a rod attached to the pole and stretching to the entrance, where you started your run. Rotate it anti-clockwise 45 degrees and it will point to precisely where you are as you pant sweet nothings to your husband. That's what Gauss meant: Specify the axis and the angle, and you've described a given rotation precisely. Take this a little further. The husband wants to know about any others doing laps like you. There are six more runners, at different spots on the track.

Looking around, you tell your husband: "30, 44, 151, 190, 286, 319". He'll know exactly where each runner is (and that one is right behind you — which one?). Now imagine making notches on the pole corresponding to each of these angles. That is, the distance from the base of the pole to a given notch tells you how far that runner has "rotated" around the stadium. That pole perfectly describes where all seven runners are at that instant. In a sense, it is a snapshot of the rotations on display at that instant in Brabourne Stadium. Penner set himself the task of finding just such snapshots of rotations in protein molecules. Working with a huge database of proteins, he was able to put together a large number of these poles — strictly theoretical, of course — pointing in all kinds of directions, with the requisite notches on them. Think of all those poles attached to a single point, and you will visualize the spiky ball — strictly theoretical, of course — they form. (Sort of like a spherical pin cushion, sort of like the cartoon image of the virus itself). What does this ball tell Penner? Some parts of it were less dense than others, meaning rotations in those regions are rarer than others. This is useful, because it is also known that the energy in these less frequently-occurring rotations is higher than elsewhere. (Remember, we are searching for spots with higher energy). As Penner notes in his paper (*Conserved High Free Energy Sites in Human Coronavirus Spike Glycoprotein Backbones*, *Journal of Computational Biology*, 13 May 2020), he was able to "pinpoint regions of high free energy ... whose obstruction might interrupt function." That is, using this ball that is just an abstraction, he identified parts of the protein molecule that are potential targets to attack — Penner called them "exotic" spots — in the effort to disable the virus's function. There's evidence that Penner might be on to something with this geometrical approach: Some regions his spiky ball uncovered are already identified weak points in the protein molecule. So maybe the other exotic spots it has uncovered are worth focusing on as well. Still, these are findings that need further research and validation. Penner's paper identified three exotic sites on the virus. Are they accessible? Are there drugs that can target them? What happens if they are attacked? Are those drugs safe for human consumption? Lots of questions to be answered. Penner also sounds this caution: "Mother Nature, with her wider vocabulary of sites and compounds, has not succeeded in finding antibodies (for the virus), so how can we expect greater success?" A sobering thought. But as Penner notes, there is a "pressing need for an effective and robust vaccine to treat COVID-19, for human society and humanity itself are under siege." Mathematics possibly rescuing us from that siege? I thoroughly like that idea. Once a computer scientist, Dilip D'Souza now lives in Mumbai and writes for his dimmers. His Twitter handle is @DeathEndsFun

New Okhla Industrial Development Authority

Administrative Building, Sector-6, Noida, G.B. Nagar (U.P.)
Website : www.noidaauthorityonline.com

E-TENDER NOTICE

E-Tenders are invited from firms/contractors registered with UPLC Lucknow for the following jobs against which bids can be uploaded and same shall be opened/downloaded as per schedule mentioned. The details and conditions of all tenders are available on Noida Authority's official website : www.noidaauthorityonline.com & <http://etender.up.nic.in> Please ensure to see these website for any changes / amendments & corrigendum etc.

Sl. No	Job No.	Name of work	Amount in Lac
A 1	12 /GM(R)/SM (WC-2)/2020-21	Strengthening of road (P/L DBM and DEC work in Internal road Sector-37), Noida	₹ 307.36
2	13 /GM(R)/SM (WC-2)/2020-21	Strengthening of road (P/L BM and BC work in Internal road Sector-20), Noida	₹ 124.27
3	18 /GM(R)/SM (NTC)/2019-20	Engagement of Agency for Installation and Operation of E-Cycle Docking Stations at Select locations in Noida.	--
4	30 /GM(R)/SM (WC-5)/2020-21	M/o Building(Repair of Plaster on Out side wall of Shramik Kunj House and repair of Toilet/ Bathroom of Shramik Kunj Pocket in sector-66), Noida.	₹ 272.57
5	31 /GM(R)/SM (WC-5)/2020-21	M/o Drain (C/o R.C.C. drain on Gijhore road from MP-2 to sector-52 Entry Gate, village Gijhore side), Noida.	₹ 152.72
6	33 /GM(R)/SM (WC-5)/2020-21	Development of Sector-67 (Construction of Flooring of parking area (T.P.-3) in A Block, sector-67), Noida.	₹ 294.03

Which can be uploaded by Date: **25-06-2020 upto 5.00 PM.**

Pre-qualification shall be opened/downloaded on Date: **26.06.2020 at 11.00 AM**

Sl. No	Job No.	Name of work	Amount in Lac
B 7	42 /GM(R)/SM (WC-2)/2019-20	Strengthening of road (P/L DBM and BC & other misc work from Kalindi Kunj road to Under Ground Car Parking Sector-95), Noida	₹ 74.00
8	14 /GM(R)/SM (WC-5)/2019-20	Resurfacing of road (P/L B.C. work in Internal road in A, B, C, E, F, G, H-block Sector-22), Noida.	₹ 86.66
9	26 /GM(R)/SM (WC-5)/2019-20	Resurfacing of road (P/L D.B.M. & B.C. work on road between sector-33-34 and sector-33A-35) Noida.	₹ 257.04
10	1 /GM(R)/SM (WC-5)/2020-21	M/o Drain (Repair of drain and P/F Precast slab on drain in front of Kendriya Vidhyala in sector-24), Noida.	₹ 93.61
11	4 /GM(R)/SM (WC-5)/2020-21	M/o Road (Providing & Laying C.C.pavement on ground in U.P.S.R.T.C. Bus Depot in sector-35), Noida.	₹ 239.69
12	9 /GM(R)/SM (WC-5)/2020-21	Strengthening of road (C/o Central Verge/ Pool path, R/o footpath and P/L D.B.M. and B.C. work in front of Group Housing (Cleo Country) In Sector-121), Noida.	₹ 239.23
13	11 /GM(R)/SM (WC-5)/2020-21	Strengthening of road (Providing and laying DBM and B.C. work on Internal roads in A, B & C Block Sector-57 Noida.	₹ 377.18
14	12 /GM(R)/SM (WC-5)/2020-21	Strengthening of road (Providing and laying B.C. work on Internal roads in sector-52), Noida.	₹ 385.90
15	13 /GM(R)/SM (WC-5)/2020-21	Strengthening of road (Providing and laying B.C. work on Internal roads in sector-53 Noida.	₹ 88.61
16	14 /GM(R)/SM (WC-5)/2020-21	Strengthening of road (Providing and laying D.C. work on Internal roads in sector-33), Noida.	₹ 88.23
17	19 /GM(R)/SM (WC-5)/2020-21	Strengthening of road (Providing and laying B.C. work on 12 mtr. & 9 mtr. Wide road in A,B,C-Block and Neeigrini-1, Sector-34), Noida.	₹ 129.70
18	25 /GM(R)/SM (WC-5)/2020-21	Strengthening of road (Providing and laying C.C. Paver locks on Pathies of road between Sector-66-71 and sector-67-70) Noida.	₹ 171.81

Which can be uploaded by Date: **18.06.2020 upto 5.00 PM.**

Pre-qualification shall be opened/downloaded on Date: **19.06.2020 at 11.00 AM**

General Manager (R), Noida

CLEAN, GREEN, SAFE & SECURE NOIDA

MUNJAL SHOWA LIMITED

CIN: L34101HR1985PLC020934
Registered Office & Works: 9-11, Maruti Industrial Area, Sector-18, Gurugram - 122015, (Haryana)
Tel: +91-124-4783000 Fax: +91-124-2341359
Email: cs@munjalshowa.net Website: www.munjalshowa.net

NOTICE

Sub: Transfer of shares under section 124(6) of the Companies Act, 2013 read with Rule 6 of The Investor Education and Protection Fund Authority (Accounting, Audit, Transfer and Refund) Rules, 2016

This Notice is hereby given to all the shareholders of M/s Munjal Showa Limited pursuant to the provisions of Section 124(6) of the Companies Act, 2013 and Rule 6 of Investors Education and Protection Fund Authority (Accounting, Audit, Transfer and Refund) Rules, 2016, read with relevant circulars and amendments thereto.

As per the said rules, dividends which are not paid/ claimed by the shareholders for last seven consecutive years or more have to be transferred/ credited to the DEMAT account of the Authority constituted under the said Rule. In this regard, we wish to bring to the kind notice that all those shareholders who haven't claimed the dividends for the last seven consecutive years, their shares are now due for transfer to the authority.

During the financial year 2018-19, the Company has transferred 4109 equity shares in respect of which dividend had remained unpaid or unclaimed for seven consecutive years or more to the IEPF Authority. The Company has sent individual notices at the latest available addresses of the shareholders, whose shares are liable to be transferred to the IEPF authority during the financial year 2019-20. Further, in terms of Rule 6 (3) of the said rules, the statement containing the details of such shareholders has been duly uploaded on the company's website www.munjalshowa.net for information and necessary action by the shareholders.

Accordingly, the concerned shareholders are requested to claim their unclaimed dividend at the earliest. In case the Company/ RTA doesn't receive any request from the shareholders, the shares shall be transferred to the authority constituted under the said Rule on the completion of the period of three months from the date of the notice.

In order to claim the unclaimed dividend, please send us a written application in this regard along with copy of PAN Card to the Company's registered office i.e. Munjal Showa Limited, Plot 9-11, Maruti Industrial Area, Sector-18, Gurugram - 122015, (Haryana).

In case, the concerned shareholders wish to claim the shares after transfer to the authority, a separate application in Form IEPF 5, available on the website www.iepf.gov.in has to be made to the Authority.

Also members are requested to notify immediately if there is any change of address, Bank Details and email IDs:

- To their Depository Participants (DPs) in respect of their electronic share accounts, and
- To the Company's Registrar, MCS Share Transfer Agent Limited, F-65 Okhla Industrial Area, Phase I, New Delhi 110020 in respect of their physical share folios, if any, quoting their folio number.

For any further queries, you may please write to us at cs@munjalshowa.net or call at 0124-4783000.

For **MUNJAL SHOWA LIMITED**
Sd/-
(Geetanjali Sharma)
Company Secretary

Place : Gurugram
Date : 11.06.2020

मध्यप्रदेश राज्य कृषि विपणन बोर्ड

तकनीकी सहायक क्र.-01 भोपाल
26 किसान भवन अरेंडा हिल्स जेल रोड भोपाल
क्र./तक.सं./नि./20-21/153 भोपाल, दिनांक : 08.06.2020

द्वितीय निविदा आमंत्रण सूचना

प्रमुख अभियंता म.प्र. लोक निर्माण विभाग में उपयुक्त (केंद्रीयकृत पंजीयन प्रणाली) पंजीकृत निविदाकारों से प्रतिशत दर आधार पर सिस्टम निविदा क्रमांक 2020 MPSAM 92796, 2020 MPSAM 92799, 2020 MPSAM 92801, 2020 MPSAM 92802, 2020 MPSAM 92803 के अन्तर्गत ऑनलाइन निविदाये दिनांक 08.07.2020 को शाम 5:30 बजे तक एवं भौतिक रूप से दिनांक 08.07.2020 को शाम 5:30 बजे तक जरिये सीड पोस्ट/पंजीकृत डाक से (विलीय आफर को छोड़कर) आमंत्रित की जाती है। निविदा प्रपत्र एवं अन्य जानकारी निविदाकारों को म.प्र. शासन के ई-निविदा के पोर्टल <https://mptenders.gov.in> पर प्राप्त होगी एवं उक्त निविदा से संबंधित समस्त जानकारी मंडी बोर्ड के पोर्टल www.mpmandiboard.co.in पर भी अवलोकनीय होगी।

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म.प्र. माध्यम/97573-2020 कार्यपालन यंत्री

ASSAM SKILL DEVELOPMENT MISSION

5th Floor, Katabari, DPS Road, NH-37
Garchuk, Guwahati - 781035

Tender No.: ASDM-1219/2019/149 Date: 11th June 2020

NOTICE INVITING TENDER

For Selection of Agency for 'Preparation of DPR for Skill University in the State of Assam' for Assam Skill Development Mission (ASDM).

The Assam Skill Development Mission (ASDM) invites response to this Request for Proposal (RFP) document from interested and eligible bidders for submission of their technical and commercial proposals for preparation of Detailed Project Report (DPR) for establishing a state of art Skill University in Assam in accordance with the conditions and manner prescribed in this RFP document through e-tender process at www.assamtenders.gov.in.

The document can be downloaded from the website www.assamtenders.gov.in. Response to this tender shall be deemed to have been done after careful study and examination of this document with full understanding of its implications. This section provides general information about the Issuer, important dates and addresses and the overall eligibility criteria for the parties. The tender document cost of ₹ 10,000/- (non-refundable) is to be submitted via crossed demand draft drawn on any Nationalized bank in favour of 'Assam Skill Development Mission' payable at Guwahati.

Last Date of submission of Bids, both online and offline is 01-07-2020 up to 17.00 hrs.

The detailed bid document can be downloaded from www.assamtenders.gov.in.

Sd/- Mission Director, ASDM

SECURITIES AND EXCHANGE BOARD OF INDIA

Recruitment of Officers in Grade A

(General, Legal, Information Technology, Engineering, Research And Official Language Streams)

Third Corrigendum to Advertisement dated March 07, 2020

Due to ongoing Covid-19 situation, the Phase I and Phase II examination for recruitment of Officers in Grade A (General, Legal, Information Technology, Engineering, Research And Official Language Streams) stands postponed. The revised dates shall be informed to candidates in due course.

Further, the last date for On-line Application and Payment of Fee has been revised as under:-

Activity	Earlier	Rescheduled
Online Application and Payment of Fee	March 07, 2020 to May 31, 2020	March 07, 2020 to July 31, 2020

For the detailed advertisement and online application form, visit SEBI website at <https://www.sebi.gov.in/sebiweb/other/careerdetail.jsp?careerid=147>

davp 15204/11/0010/2021

New Okhla Industrial Development Authority

Administrative Building, Sector-6, Noida-201301 (U.P.)
Website : www.noidaauthorityonline.com

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A) 06/DGM(JAL)/AO/SM(JAL)-I/2020-21, M/o Sewerage Scheme in Sector-151 (P/L Balance Sewer Line Between Road of Sector-151 and 153) Noida. Cost Rs.99.88 Lacs

The above tenders can be uploaded by date 26.06.2020 upto 5.00 PM. Pre - qualification shall be opened / downloaded on date 29.06.2020 at 11.00 AM.

SENIOR MANAGER (JAL)-I
NOIDA

Office Sector-5

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(A Miniratna Company)
(A Subsidiary of Coal India Limited)

Tender Notice

"All the tenders issued by CIL and its Subsidiaries for procurement of Goods, works and Services are available on website of Coal India Limited www.coalindia.in/respective subsidiary Company. CIL e-procurement portal <https://coalindiatenders.nic.in> & central public procurement portal <https://eprocure.gov.in>. In addition, procurement is also done through GeM Portal <https://gem.gov.in>."

(R-11)