Topics - MINDS MAPS included (Daily current affairs 28th November 2024

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- **Moiré Materials and Superconductivity**

- **Negotiations on Plastic Pollution Treaty**

- **MGNREGA: Ensuring Rural Employment**

- **Dark Tourism**

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By saurabh Pandey

THE HINDU

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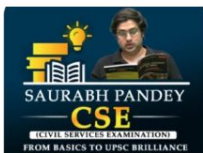Border management and internal security

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At treaty negotiations in Busan, India proposes compensation to meet costs of controlling plastics

Jacob Koshy
BUSAN

Developing countries will comply with 'control measures' on plastic only if they are compensated for the cost they entail, India said in a proposal at the Global Plastics Treaty negotiations on Wednesday. This is India's first substantive move during the talks being held in the South Korean city of Busan.

Echoing a principle from climate change negotiations, India has emphasised that there must be a transfer of technologies from developed to developing nations that must respect "national circumstances".

Exactly what these 'control measures' and 'costs' are has not been specified yet. They are among a plethora of crucial undefined terms; in fact, there is still no agreed definition for the word 'plastic' as far as the treaty is concerned.

These and many other concepts are at the heart of the negotiations, involving around 170 countries.

Officially called the 5th Intergovernmental Negotiations Committee (INC), which is administered by the United Nations Environment Programme (UNEP), the talks are scheduled to conclude on December 1.

More ambitiously, the treaty aims at having countries cut the production of plastic itself and as a consequence, plastic polymers, which are components of most products undergirding modern economies.

India has a significant petrochemicals refining industry and while it has banned several kinds of single-use plastic, it has been far from successful at reining in plastic waste.

Solo proposal

Several other countries have articulated proposals regarding finance mechanisms. However, India is among the few that have

While India has banned several kinds of single-use plastic, it has been far from successful at reining in plastic waste. AP

gone solo in making submissions.

'A just transition'

In verbal 'interventions', where countries publicly raise their concerns to the INC Chair, the tenor of India's submissions is that speed ought not to trump the spirit of consensus, inclusivity, and transparency. While many countries have addressed various proposals in the several contact groups, India has so far restricted itself to formal proposals on finance mechanisms.

India has also proposed that a new dedicated multilateral fund be created with contributions to be "additional and distinct" from other financial transfers. This fund would be governed by a duly constituted subsidiary body that will also facilitate "...transfer of technology from developed countries to developing countries, for achieving a just transition towards sustainable production and consumption of plastics, in accordance with national circumstances under the financial mechanism," India's submission added.

Worried countries

While national representatives at these talks are in principle committed to an agreement, many are worried that a treaty on plastic pollution will restrict the production and supply of plastic and polymers, disrupting their economies. On the other end of the spectrum are Pacific island nations such as Tuvalu, Palau, and Fiji, who are demanding ambitious action on restraining both plastic waste and production. They point out that the marine pollution from dumping plastic waste as well as their limited capacity to respond has resulted in existential threats to their countries.

Key Points

🌍 Developing Countries' Compliance: Nations like India require compensation to adhere to plastic control measures.

🇮🇳 India's Proposal: India made a significant proposal at the Global Plastics Treaty negotiations in Busan, South Korea.

🔄 Technology Transfer: India emphasizes the need for technology transfer from developed to developing countries, considering their unique circumstances.

❓ Undefined Terms: Key terms such as 'control measures', 'costs', and 'plastic' remain undefined in the treaty discussions.

🌐 Global Participation: The negotiations involve approximately 170 countries as part of the 5th Intergovernmental Negotiations Committee (INC) under UNEP.

📅 Conclusion Timeline: Talks are set to conclude on December 1, aiming to reduce plastic production and its components.

🏭 India's Plastic Waste Challenge: Despite banning certain single-use plastics, India faces challenges in managing plastic waste due to its large petrochemicals industry.

India's Unique Approach to Plastic Pollution

Key Points

🇮🇳 India's Independent Proposals: Unlike many countries that collaborate on finance mechanisms, India has chosen to submit proposals independently.

🤝 Emphasis on Consensus: India stresses the importance of consensus, inclusivity, and transparency, advocating that speed should not compromise these values.

💰 New Multilateral Fund: India proposes a new fund, separate from existing financial transfers, to support sustainable practices.

🌍 Technology Transfer: The fund aims to facilitate technology transfer from developed to developing nations, promoting sustainable plastic production and consumption.

⚖️ Economic Concerns: Some countries worry that a treaty on plastic pollution could limit their economies by restricting plastic production and supply.

🌊 Pacific Island Nations' Advocacy: Nations like Tuvalu, Palau, and Fiji push for stronger actions against plastic waste due to existential threats from marine pollution.

📉 Economic vs. Environmental Divide: Discussions highlight a divide between nations concerned about economic impacts and those advocating for urgent environmental action.

Give environmental clearances for Kalasa-Banduri, Mekedatu projects: Shivakumar to Centre

The Hindu Bureau
BENGALURU

Karnataka Deputy Chief Minister D.K. Shivakumar on Wednesday called upon Union Minister for Environment and Forest Bhupender Yadav and appealed to him to expedite environmental clearance for the Kalasa-Banduri and Mekedatu projects, which are crucial for fulfilling the drinking water needs of north Karnataka and Bengaluru, respectively.

He also urged the Centre to issue a gazette notification on the Krishna Water Disputes Tribunal-II decisions for equitable water distribution between Karnataka, Andhra Pradesh, and Maharashtra.

D.K. Shivakumar

Mr. Shivakumar stressed on collaboration between the State and Central governments for successful project implementation and urged Mr. Yadav to declare the Upper Krishna Project and the Upper Bhadra Project as national projects for additional funding from the Centre.

In September, Karnata-

ka urged the Centre to provide necessary clearance from the National Board for Wildlife (NBWL) to expedite the execution of the long-pending Kalasa-Banduri Nala Diversion Project. The board rejected Karnataka's proposal to use forest land for the Kalasa project in the Western Ghats citing legal disputes between Goa, Karnataka, and Maharashtra related to Mahadayi Water Dispute Tribunal's award, which was pending before the Supreme Court.

However, Karnataka had contested the decision of the NBWL stating that the Supreme Court does not restrain Karnataka from proceeding with the project.

Project Details

📍 Location: Situated in Karnataka, India, the Kalasa-Banduri and Mekedatu projects are pivotal for the region.

💧 Purpose: These initiatives focus on improving water supply and management.

🏗️ Infrastructure: Involves constructing dams and reservoirs to control water flow.

🌱 Environmental Impact: Discussions are ongoing about the effects on local ecosystems.

⚖️ Political Context: The projects are politically sensitive, involving debates among state governments.

💰 Funding: Financial backing and budget allocations are crucial for project success.

🔄 Future Prospects: Expected to enhance irrigation and drinking water supply, benefiting local communities.

New moiré superconductor opens the door to new quantum materials

Scientists have found that moiré materials made from semiconductor materials can also be superconducting, a property once considered to be exclusive to graphene; exploring why semiconductor moiré materials behave differently is key to advancing understanding of quantum materials

Tejasri Gururaj

Scientists are constantly engineering new materials that exhibit exotic properties. Moiré materials, in particular, are deceptively simple.

Take a material made of a single type of atom, like a block of graphite. Slice off a thin layer from the top so that you have a two-dimensional sheet of carbon atoms bonded together (graphene). Place one sheet on top of another. Finally, twist the top sheet by a small angle. You now have a moiré material.

These materials have unusual electronic and quantum properties. The one made of graphene has even been found to be a superconductor.

In a recent study in *Nature*, scientists reported that moiré materials made from semiconductor materials can also be superconducting, a property once considered to be exclusive to the graphene system.

Exploring why semiconductor moiré materials behave differently from graphene in terms of superconductivity is key to advancing our understanding of quantum materials. This in turn can pave the way for new materials with more unusual properties – and unusual applications.

The moiré pattern

The researchers explored superconductivity in twisted bilayer tungsten diselenide ($tWSe_2$), a moiré material created by stacking two layers of tungsten diselenide, a semiconductor, and rotating one layer by a small angle.

Even though the two layers of a moiré material have the same arrangement of atoms, the misalignment caused by the small twist produces a completely different pattern when seen from the top (see image above). This is called the moiré pattern.

In moiré materials, the moiré pattern gives rise to new behaviours that are not present in the individual 2D materials alone. This is because the twist leads to the formation of flat bands in the electronic structure of the material.
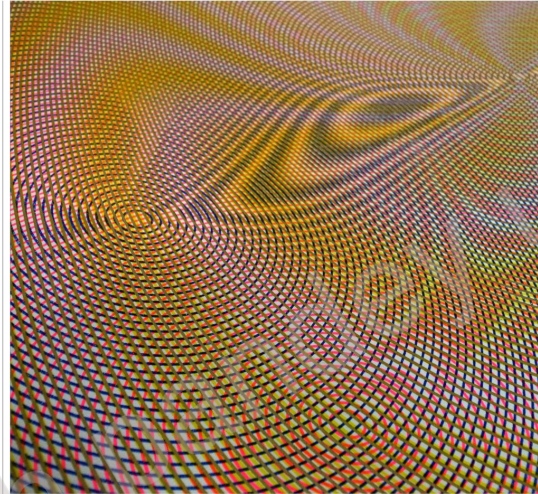
Flat bands to superconductivity

The electronic structure of a material describes how electrons in the material behave. The energy bands are a way to visualise the energy the electrons possess and how fast they move within the material.

Imagine the energy bands to be a ladder: each step (or band) represents the range of energies an electron can have. As you go up the ladder, the electron possesses more and more energy and momentum, meaning it will move faster.

A flat band means that the energy values of the electrons across the ladder are nearly constant, creating a flat region within the band. In this scenario, all the electrons have the same energy, unlike in typical materials where the energy levels are spread out over a range.

Also in typical materials, electrons gain or lose kinetic energy when they move across different energy levels, which affects their speed and momentum. But in moiré materials, because the bands are flat, the electrons experience very little variation in energy.

As a result, the electrons move slowly and are said to be heavy. These slower-moving electrons are more likely to interact with each other, creating strong electron-electron interactions that

aren't seen in typical materials.

These interactions can lead to the formation of Cooper pairs, where two electrons pair up across a short distance and move around as a single unit. This pairing is central to the phenomenon of superconductivity. (Leon Cooper, for whom the pairs are named, passed away on October 23.)

Their coordinated movement helps them avoid scattering, a process where electrons collide with atoms or impurities in the material and deviate from their path, causing electrical resistance. On the other hand, Cooper pairs can travel through the material without scattering, leading to zero resistance and energy loss, and thus superconductivity.

The devil in the twist

The researchers used $tWSe_2$ with a twist angle of 3.65° to form a moiré material.

Then they examined how the electrons behaved when the material's electronic states were half-filled, a configuration strongly associated with superconductivity in moiré materials. (These states refer to the steps on the energy ladder: each state can accommodate a fixed number of electrons.)

They also examined the behaviour of the electrons when the energy gap between the sublattices within the material is small, since this influences the superconducting properties. Sublattices are smaller grids of groups of atoms within the material.

In typical materials, electrons gain or lose kinetic energy when they move across different energy levels, which affects their speed and momentum. But in moiré materials the electrons experience very little variation in energy

The researchers found that $tWSe_2$ was a robust conductor with a transition temperature of around -272.93° C. The transition temperature is the critical value below which a material enters the superconducting state, exhibiting zero electrical resistance.

The temperature observed is on par with those found in high-temperature superconductors. Conventional superconductors transition at around -250° C.

The superconductivity in $tWSe_2$ occurs precisely when the electronic states are half-filled. The team also found that the moiré material could transition to an insulating (non-conducting) state by altering the electronic properties of the material.

The material had a coherence length about 10 times longer than other moiré materials, meaning that its superconducting state is not fragile.

The study also revealed that superconductivity in the moiré material occurred only in certain regions,

determined by the filling of the electronic states. In its non-superconducting state, $tWSe_2$ had the properties of a strongly correlated metal, where the strong electron interactions play a pivotal role in determining the material's overall behaviour.

Stability in unity

Previous research with $tWSe_2$ has shown potential superconducting states, but it was unstable when researchers cycled it between room temperature and the transition temperature. The material couldn't maintain its superconducting properties because it was unstable.

According to the new study, $tWSe_2$ actually has a robust superconducting state – and one that's different from how the property emerges in graphene-based moiré materials. For $tWSe_2$, superconductivity is driven by electron-electron interactions and half-band filling, while graphene-based systems depend on flat bands and electron-lattice interactions.

As a result, while graphene-based systems become superconducting at higher temperatures, $tWSe_2$ is more stable. This study creates a new avenue to explore superconductivity in semiconductor-based systems. It also offers valuable insights into the material's electronic structure changes when its 2D layers are twisted.

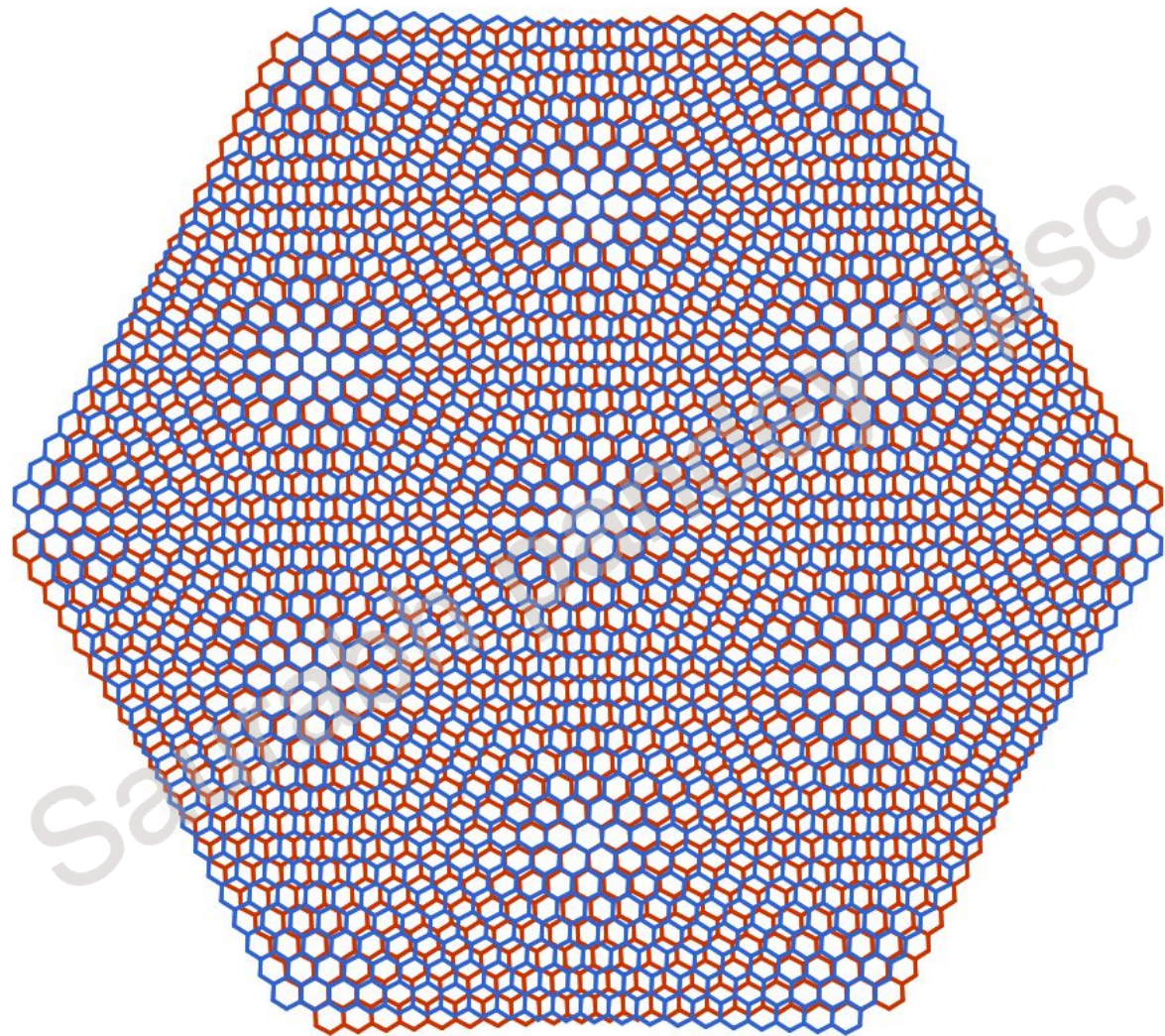*(Tejasri Gururaj is a freelance science writer and journalist with a master's degree in physics. tejasri.gururaj@gmail.com)*

As this example of screen-printing shows, a moiré pattern emerges when two layers, one with red circles and one with black circles, are overlaid and one layer is twisted by a small angle. JEAN-NO (CC BY-SA 4.0)

Topic → Moiré Materials and Superconductivity

Key Insights

🧊 Graphene Creation: Formation of a two-dimensional sheet of carbon atoms by slicing graphite and stacking layers with a twist.

🔄 Moiré Materials: Unique electronic and quantum properties arise from twisting the top layer of stacked sheets.

⚡ Superconductivity Discovery: Both graphene-based and semiconductor moiré materials exhibit superconductivity.

🔍 Research Focus: Investigating differences in superconductivity between semiconductor moiré materials and graphene.

🧪 Twisted Bilayer Tungsten Diselenide: Focus on this semiconductor moiré material with unique superconducting properties.

📊 Moiré Pattern Effects: Twisting creates a moiré pattern, leading to new behaviors and flat bands in the electronic structure.

🌌 Potential Applications: Insights could lead to new materials with unusual properties and applications.

Summary: Moiré materials, especially twisted bilayer tungsten diselenide, challenge previous notions about superconductivity with their unique properties.

Superconductivity and Electron Interactions

Understanding Electronic Structures

📊 Electronic Structure: Describes the behavior of electrons and their energy levels, visualized as energy bands.

Energy Bands and Their Significance

🪜 Energy Bands: Imagined as a ladder, each step represents a range of energies that electrons can possess, with higher steps indicating more energy and momentum.

The Role of Flat Bands

🔄 Flat Bands: Indicate that electrons have nearly constant energy across the band, leading to slower-moving, "heavy" electrons compared to typical materials.

Electron Interactions in Moiré Materials

⚛️ Electron Interactions: In moiré materials, slow-moving electrons experience strong interactions, potentially forming Cooper pairs.

Formation and Importance of Cooper Pairs

👥 Cooper Pairs: Consist of two electrons that pair up and move as a single unit, crucial for superconductivity.

Achieving Zero Resistance

🚫 Zero Resistance: Coordinated movement of Cooper pairs allows them to avoid scattering, resulting in zero electrical resistance and energy loss.

Emergence of Superconductivity

🧊 Superconductivity: Unique properties of flat bands and Cooper pairs contribute to the emergence of superconductivity in certain materials.

- **The researchers used tWSe2 with a twist angle of 3.65o to form a moiré material.**
- **The most famous twisted bilayer system is obtained by stacking one layer of graphene on top of another and rotating the two layers by a small twist angle, θ. This causes a moiré pattern to arise between the lattices of the two graphene layers**

Superconductivity in tWSe2: A New Frontier

Key Insights

🔬 Previous Research: tWSe2 showed potential for superconductivity but was unstable between room and transition temperatures.

⚡ New Findings: tWSe2 exhibits a robust superconducting state, distinct from graphene-based moiré materials.

🔄 Mechanism: Superconductivity in tWSe2 is driven by electron-electron interactions and half-band filling, unlike graphene systems that depend on flat bands and electron-lattice interactions.

🌡️ Temperature Stability: While graphene systems achieve superconductivity at higher temperatures, tWSe2 offers greater stability.

🧪 Research Implications: Opens new avenues for exploring superconductivity in semiconductor-based systems.

📊 Electronic Structure: The study provides insights into changes in the electronic structure of tWSe2 when its 2D layers are twisted.

🌌 Contribution to Science: Enhances understanding of superconductivity in two-dimensional materials.

Summary

The study confirms that tWSe2 has a stable superconducting state driven by electron interactions, differing from graphene systems, and opens new research avenues in semiconductor superconductivity.

Greenpeace activists hold placards against plastic production in Busan on Monday. AFP

A primer on plastic pollution treaty talks

Associated Press

A last round of negotiations on a legally binding treaty to address the global scourge of plastic pollution has opened in Busan, South Korea. National delegations still have a lot to hammer out before there is a treaty. Most contentious is whether there will be a limit on the amount of plastic that companies are allowed to produce.

Led by Norway and Rwanda, 66 countries plus the European Union say they want to address the total plastic on Earth by controlling plastic design, production, consumption and what happens at the end of its life.

Some plastic-producing and oil and gas countries, including Saudi Arabia, vigorously oppose such limits.

Global plastics production is set to reach 736 million tons by 2040, up 70% from 2020, without policy changes, according to the Organisation for Economic Co-operation and Development. Negotiators must also decide whether the treaty will reduce or eliminate single-use plastics. They'll have to resolve whether to end the use of

Industry leaders want a deal that prevents plastic pollution by redesigning plastics to be reused, recycled, and remade into new products, keeping the materials in circulation

hazardous chemicals in plastics and whether these steps will be mandated or merely encouraged. There are some things many countries agree on. They want provisions in a treaty to promote the redesign of plastic products so they can be recycled and reused. They want to invest to better manage plastic waste. They want to increase recycling rates and help waste pickers transition to safer jobs. They agree there needs to be a mechanism to help countries pay for anything required of them.

Graham Forbes, who is leading a Greenpeace delegation in Busan, said his group could support an agreement that puts sensible guardrails in place to reduce the amount of plastic produced, eliminates toxic chemicals and protects people from the uncontrolled use of plastics. That's achievable, but will take political leadership and courage not seen yet in earlier negotiations, he added.

Frankie Orona, executive director of the Texas-based Society of Native Nations, said they demand a treaty that tackles the root causes of the crisis rather than just managing plastic waste.

"We must seize this moment and leave a legacy we can be proud of, with a non-toxic sustainable future for all children and our children's children," he said. Industry leaders want an agreement that prevents plastic pollution by redesigning plastics to be reused, recycled and remade into new products. They say this will keep the materials in circulation and out of the environment.

Company executives said they'll support a treaty that recognizes plastics' benefits to society, while ending pollution. "I would hate to miss this opportunity because we get fixated on issues that divide us rather than unite us in this purpose of ultimately addressing the issue of plastic pollution," said Steve Prusak, president and CEO of Chevron Phillips Chemical Company. "It's a really critical time. We're really hopeful that what we get out of the meetings will lead to practical, implementable policies and harmonization across the globe."

Topic → Negotiations on Plastic Pollution Treaty

Overview of Negotiations

🌍 Location: Final negotiations are taking place in Busan, South Korea for a legally binding treaty on plastic pollution.

⚖️ Key Issues: Major debates focus on whether to impose limits on plastic production by companies.

Global Support and Opposition

🌐 Support: 66 countries and the EU, led by Norway and Rwanda, advocate for controlling plastic through its entire lifecycle: design, production, consumption, and disposal.

🚫 Opposition: Nations like Saudi Arabia, which are major plastic producers, oppose production limits.

Current and Projected Plastic Production

📈 Rising Production: Without policy changes, global plastic production is expected to rise by 70% to 736 million tons by 2040.

Agreed Provisions and Leadership

♻️ Consensus: There is agreement on redesigning plastics for better recycling, improving waste management, and boosting recycling rates.

🌱 Leadership Call: Advocates emphasize the need for political courage to implement effective measures against plastic pollution.

Summary

Negotiations in Busan aim to establish a treaty to combat plastic pollution, with significant disagreements on production limits but a shared goal of enhancing recycling and waste management.

The right to work deleted

Why has there been a surge in the deletion of workers from job cards? Does this have any relation to the government making Aadhaar-based payment systems (ABPS) mandatory in MGNREGA? What is the procedure to be followed to undertake deletions?

Chakradhar Buddha
Rajendran Narayanan

Central to the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is the legal right to work for 100 days per year per rural household. Each household gets a unique job card containing the list of all its registered adults. One cannot work in MGNREGA without a job card. Addition of new members to job cards happens upon furnishing appropriate documents establishing adulthood.

Schedule II, Paragraph 23 of the Act outlines the procedure for deletions of workers from job cards – "If the Gram panchayat is satisfied at anytime that a person has registered with it by furnishing false information, it may direct the Programme Officer to direct his name to be struck off from the register and direct the applicant to return the job card." Regarding due process, it says that a deleted worker, if alive, must be "given an opportunity of being heard in the presence of two independent persons."

Guidelines for deletion

Implementation guidelines for MGNREGA are available in Master Circulars which are released either annually or once in two years by the Ministry of Rural Development (MoRD). The Master Circular from 2021-22 specifies clear protocols for worker deletions as follows. A job card can only be deleted under the following situations: (a) when a household permanently migrates, (b) the job card is found to be a duplicate, (c) it was issued based on forged documents.

Additionally, if a Gram Panchayat is reclassified as a Municipal Corporation, all job cards in that panchayat are deleted. In line with the Act, the circular emphasises due process, requiring independent verification by the Programme Officer before any deletions. Moreover, all deletions must be documented, reported to the Gram Sabha/Ward Sabha, and updated in the MGNREGA Management Information System (MIS). The MIS is the digital architecture of MGNREGA. Beyond the listed reasons, the MGNREGA MIS has dropdowns in its menu with 12 reasons for deletions of workers and job cards. Some of which are "Duplicate Applicant", "Fake Applicant", "Not willing to work" etc.

In 2021-22, 1.49 crore workers were deleted, which surged to 5.53 crore in 2022-23 resulting in a 247% increase in deletions in 2022-23. In the last four years, names of 10.43 crore MGNREGA workers across India have been deleted.

The surge of deletions in 2022-23 coincided with the period when the Union Government issued several circulars making Aadhaar-based payment systems (ABPS) mandatory in MGNREGA. For ABPS to work, as a first step, every worker's Aadhaar number had to be seeded with her job card. Senior officials rely on the percentage of workers whose Aadhaar has been seeded with their respective job cards as a metric of compliance. Strict diktats were issued to field officials to increase this percentage.

In response to questions in the Lok Sabha on February 6, 2024, regarding worker deletions in MGNREGA, the Minister of State for Rural Development, Sadhvi Niranjan Jyoti, in a written reply stated: "Updation and deletion of job cards is a regular exercise conducted by the States and Union Territories under MGNREGS. These actions are undertaken to maintain accuracy and transparency." However, a paper published in the *Economic and Political Weekly* by Chakradhar Buddha and Laavanya Tamang establishes how field officials resorted to deleting job cards without verification in a rush to increase ABPS compliance percentage. Deleting workers is akin to reducing the denominator to make the fraction bigger.

Methodology followed

The overall number of workers deleted in each State can be easily obtained from the MIS but accessing the official reason in the MIS for such deletions is computationally intense. So, to investigate the reasons for deletions we have resorted to statistical sampling. We randomly sampled one block each in 21 States for the last four financial years including the current one. This yielded data of worker deletions from 1,914 villages. In our sample, more than 2.98 lakh workers were deleted with nearly 1.65 lakh of them being deleted in 2022-23 and around 30,000 deleted in the last six months alone. Figure 1 shows the five States with maximum worker deletions (rounded off) in our sampled villages.

Nearly 53,000 workers were deleted in Madanpur block in Aurangabad district of Bihar and around 32,000 workers in Mayureshwar-I block in Birbhum district of West Bengal were deleted. There is noticeable intra-block variation in the number of workers deleted. For instance, in Madanpur block, 4,877 workers were deleted in Dakshini Umanga village while only three were deleted in Shekhpur village. The situation in West Bengal is different from the rest of the States. As the Union Government has not released any funds to West Bengal from December 26, 2021, no MGNREGA work has happened here since then. In our sampled block in West Bengal, the number of workers deleted jumped from 550 in 2021-22 to 31,861 in the next year. Out of these, half were officially categorised as "Duplicate Applicant" while 10,446 workers who were deleted were categorised as "Non-existent in Panchayat."

Job cards provide the legal guarantee to work at any time, not just on the day when deletions happen. Deleting workers' names from job cards on grounds of "not willing to work", denies the worker her legal right to work. And yet this is the main reason for deleting nearly 1.90 lakh workers in our sample. This is also the main official deletion reason in the MIS for each of the four years in our sample; from 63% of deletions in 2021-22, it jumped to 83% in the ongoing financial year. What is more intriguing is that nearly 20,000 workers who got deleted as "Not willing to work", actually worked or demanded work in the same financial year in which their names were deleted. In our interactions with civil society organisations working on MGNREGA across 10 States, we found that deletions are often not carried out through Gram Sabhas as mandated by the Act and, alarmingly, without the workers' knowledge. We have also met workers who are victims of wrongful deletions. Further, the official reason for deleting 1,500 workers in our sample is "Village becomes urban." This reason is observed in 153 out of 1,914 villages in our sample. But as per the Act, if a village becomes urban, then the job cards of all the workers in that village would have to be deleted. So clearly, using this reason to delete a subset of workers appears absurd.

Sticking points

Since our sample contains all the transactions of deletions in the selected blocks, the trend we observe is likely to hold for the whole country although the actual proportions might fluctuate a little. Two points from the data are hard to believe. First, despite high rural unemployment, as per official reasons, 71% of workers in our sample are "not willing to work." Second, the government's claims that the surge in deletions has no connection with making ABPS mandatory although all the circumstantial evidence concerning deletions suggest otherwise. The response to our RTI application from MoRD suggests that, despite listing deletion reasons in the MIS, the ministry has not conducted any verification and analysis of deletion reasons, including the 'Not willing to work' reason. This further corroborates the arbitrariness concerning the violations of the right to work.

Adhering to the verification processes and protocols outlined in the Act and Master Circular is crucial to prevent arbitrary deletions. Conducting independent audits, regular reviews, involving gram sabhas and efficient grievance redress systems can reduce irregularities. Training Gram Panchayats to conduct impartial inquiries and including worker representatives in decision-making panels are needed. Public consultations and proactive measures to enhance transparency, accountability, and fairness are vital to guarantee MGNREGA's mandate of employment and social justice.

Buddha & Narayanan are affiliated with LibTech India. Narayanan is a faculty member at Azim Premji University, Bangalore. The views expressed are personal. The authors thank Suguna Bheemerasetti of LibTech India for scraping the data for this analysis.

In 2021-22, 1.49 crore workers were deleted, which surged to 5.53 crore in 2022-23 resulting in a 247% increase in deletions in 2022-23. AFP

Disappearing jobs

In the last four years, names of 10.43 crore MGNREGA workers across India have been deleted

Since 2022, close to 1.65 lakh workers have been deleted. Following are the top five States

State	Deleted workers (in thousands)
Bihar	53
West Bengal	32
Andhra Pradesh	39
Odisha	28
Gujarat	23

Five main reasons for deleting the names of 2.67 lakh workers (excluding West Bengal)

Reason for deletion	Number of workers deleted	Percentage for each reason (rounded to nearest whole number)
Not willing to work	1,89,555	71
Duplicate job card	21,705	8
Duplicate applicant	12,630	5
Non-existent in Panchayat	10,690	4
Family had been shifted	8,598	3

THE GIST

▼ The MGNREGA scheme ensures the right to work for 100 days per year per rural household. However, it has been observed that there is an increasing number of worker deletions with a total of 10.43 crore MGNREGA workers across the country in the past four years alone

▼ The surge of deletions in 2022-23 coincided with the period when the Union Government issued several circulars making Aadhaar-based payment systems (ABPS) mandatory in MGNREGA

▼ Deleting workers' names from job cards on grounds of "not willing to work", denies the worker her legal right to work. And yet this is the main reason for deleting 1.90 lakh workers in the sample surveyed

Key Aspects of MGNREGA

🏡 Legal Right to Work: Guarantees 100 days of work annually for each rural household, requiring a unique job card for participation.

📝 Job Card System: Lists all registered adults in a household; new members can be added with proper documentation.

❌ Deletion Procedures: Job cards can be deleted if false information is provided, following a due process including a hearing.

📜 Implementation Guidelines: Master Circulars from the Ministry of Rural Development outline protocols for worker deletions, emphasizing independent verification.

🔄 Reasons for Deletion: Includes permanent migration, duplication, or issuance based on forged documents.

📊 MGNREGA Management Information System (MIS): Tracks job card statuses and deletions, offering 12 reasons for worker deletions.

🏛️ Impact of Reclassification: Reclassification of a Gram Panchayat as a Municipal Corporation results in the deletion of all job cards in that area.

Summary: MGNREGA provides a legal framework for rural employment, detailing job card management, deletion protocols, and the importance of due process in maintaining the integrity of the system

Amid war, Ukraine sees influx of western visitors as part of 'dark tourism'

Agence France-Presse
IRPIN

Spanish traveller Alberto Blasco Ventas looked out at Ukraine's destroyed Irpin brige, blown up to stop Russian troops in 2022 and now a hotspot for thrill-seeking tourists visiting the country.

Russian forces had planned to cross the bridge in their attempts to seize the Ukrainian capital Kyiv at the beginning of the war.

The Russian army has since retreated hundreds of kilometres away, but launches near-daily missile and drone strikes on the Ukrainian capital that Mr. Blasco Ventas chose as his vacation spot.

"It is my first time in a war zone," the 23-year-old software engineer said. "I am a little bit scared, I am not going to lie, because you never know."

He was on a "dark tourism" tour offered by one of a dozen or so Ukrainian companies specialising in a marginal but growing sector – allowing tourists to visit locations of tragic events.

To get to Ukraine, he shrugged off concerns expressed by his family and got on a flight to Moldova, followed by an 18-hour train ride.

The wannabe influencer filmed every step of the trip, which he planned to post on his YouTube channel – followed by 1,15,000 people – where he has already chronicled the "most horrible psychiatric hospital" in the United States and "the most dangerous border" in the world, between China, Russia, and North Korea.

Before the war, Ukraine already hosted tens of

Casual visit: A traveller and a local guide at a tank 'graveyard' during a tour near Dmytrivka village, outside Kyiv. AFP

thousands of tourists every year in Chernobyl, which saw the world's worst nuclear disaster in 1986.

Answering critics that would consider such trips morbid or immoral, Ms. Blasco Ventas insisted he was acting "with respect".

War Tours, which organised his visit, said it has accommodated around 30 customers since January, mainly Europeans and Americans paying between 150 euros and 250 euros for the whole tour.

'Not about money'

Part of the profits are given to the army, said company co-founder Dmytro Nykyforov who insisted the initiative was "not about money, it is about memorialisation of the war."

Svitozar Moiseiv, the manager of tourism company Capital Tours Kyiv, said profits are negligible but the visits have an educational value.

"It is like a vaccine to prevent this from ever happening again," he said.

The visits generally centre around Kyiv and its suburbs that saw alleged massacres from Russian troops in the early 2022.

But some companies come closer to the front – including a visit of several days in southern Ukraine costing up to 3,300 euros.

"A Shahed drone recently fell 300 metres away from my house. I would not have any desire to live through this kind of experience," said Ruslan Savchuk, 52. "But if people want that for themselves, it is their right," he said, adding that tourists could generate useful incomes for local communities.

But Mykhailyna Skoryk-Shkarivska, local councillor in Irpin and former Deputy Mayor of Bucha, said most residents are fine with "dark tourism" but some consider the profits from it as "blood money".

"There are accusations – 'Why do you come here? Why do you want to see our grief?'," she said, recalling conversations with local people.

Mariana Oleskiv, head of the National Agency for Tourism Development, said the development of war tourism posed many ethical questions but that the market was bound to grow. "War brought attention to Ukraine, so we have stronger brand. Everybody knows about our country," she said.

Topic → Dark Tourism

Understanding Dark Tourism

🌍 Definition: Dark tourism involves visiting locations associated with death, tragedy, and the macabre.

🏴‍☠️ Common Sites: Includes battlefields, prisons, and disaster zones with historical significance.

📚 Ethical Considerations: Raises questions about the commercialization of suffering and visitor motivations.

🕯️ Educational Value: Offers insights into historical events and human experiences.

🎭 Trend: Increasingly popular as people seek adventure or confront mortality.

🌐 Terminology: The term "dark tourism" has been prevalent in academic and travel discussions since the late 20th century.

🏛️ Notable Sites: Examples include Auschwitz, Chernobyl, and the Catacombs of Paris.

Summary: Dark tourism involves visiting sites linked to death and tragedy, raising ethical questions while providing educational insights

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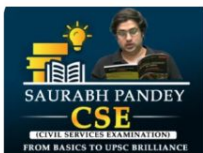Border management and internal security

Week -2 - International relations

Week -3 -Ethics and integrity

Week -4 - Ethics and integrity

One short videos of sources will b uploaded + model answers

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