

The Hindu Important News Articles & Editorial For UPSC CSE

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—It's about quality—

India's proposal at the Global Plastics Treaty negotiations calls for financial compensation and technology transfer to developing nations to address plastic pollution.

- Divergent country positions highlight challenges in limiting plastic production while balancing environmental and economic priorities.
- The treaty aims for global harmonization to curb plastic waste and ensure sustainability.

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 multi-lateral 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 pro-

duction 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.

MORE REPORTS ON
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India's Stand at Global Plastics Treaty Negotiations

- India proposed that developing countries comply with 'control measures' on plastics only if compensated for associated costs.
- The proposal emphasizes technology transfer from developed to developing nations while respecting "national circumstances," echoing principles from climate change negotiations.

Daily News Analysis

- India's submission is one of the few solo proposals, focusing on finance mechanisms and calling for a dedicated multilateral fund.

Unresolved Definitions and Contentious Issues

- Key terms like 'control measures' and even 'plastic' lack agreed definitions, complicating negotiations involving 170 countries.
- The treaty aims to curb plastic production and polymers, which are integral to modern economies.
- Global plastics production is projected to reach 736 million tons by 2040, a 70% increase from 2020, without policy changes.

India's Formal Proposals

- India proposed the creation of a multilateral fund, governed by a subsidiary body, to facilitate technology transfer for sustainable plastic production.
- It stressed inclusivity, transparency, and consensus in decision-making, advocating for sustainable transitions under national circumstances.

Diverging Country Positions

- Plastic-producing nations, including Saudi Arabia, oppose limits on plastic production, citing economic disruptions.
- Pacific island nations like Tuvalu and Fiji demand stricter action, citing existential threats from marine plastic pollution.
- Norway, Rwanda, 66 other countries, and the EU advocate addressing plastic design, production, and end-of-life management.

Key Issues Under Debate

- Negotiators must decide on limiting single-use plastics, reducing hazardous chemicals, and the extent of enforceable mandates.
- Common agreement exists on redesigning plastic products for recycling, better waste management, and helping waste pickers transition to safer jobs.

Civil Society and Industry Perspectives

- Environmental groups, such as Greenpeace, demand measures to reduce plastic production, eliminate toxic chemicals, and ensure a non-toxic, sustainable future.
- Industry leaders support policies that promote plastics' benefits while ensuring sustainable recycling and pollution prevention.
- They stress the need for practical, implementable, and globally harmonized policies to address the plastic crisis.

Conclusion

- The treaty negotiations face challenges of balancing environmental concerns with economic interests.
- A consensus-driven, inclusive approach with adequate funding and technology transfer is critical for meaningful progress.
- The treaty represents a pivotal moment to create a sustainable, non-toxic future while addressing the global plastic pollution crisis.

UPSC Mains Practice Question

Ques : Discuss the significance of the Global Plastics Treaty in addressing the global plastic pollution crisis. Examine India's proposals at the treaty negotiations and their implications for balancing environmental and economic priorities in developing countries. (150 Words /10 marks)



Opposition protests in Parliament over issues like alleged Adani Group misconduct, Manipur conflict, and Sambhal violence led to early adjournments of both Houses.

- Despite disruptions, the government agreed to a discussion on the 75th anniversary of the Constitution's adoption.

Amid protests by Opposition, both Houses adjourned again

No substantive business conducted on second working day of session; Opposition demands JPC into Adani allegations, Manipur conflict, and U.P. violence; Dhankhar rejects notices under Rule 267, says that Chair's ruling requires 'deference'

The Hindu Bureau
NEW DELHI

Opposition protests on a variety of issues – the demand for a parliamentary probe into the Adani group's alleged corruption, the continued conflict in Manipur and violence in Sambhal, Uttar Pradesh – forced early adjournments of both Houses of Parliament on Wednesday.

This is the second working day in this Parliament session that no substantive business has been conducted.

The government, acceding to the Opposition's demand, has agreed to hold a discussion in the Rajya Sabha on the 75th anniversary of the adoption of the Constitution. The decision was taken at the Upper House's Business Advisory Committee meeting on Wednesday. The Leaders of the Opposition in both



Chaotic scenes: Lok Sabha Speaker Om Birla leaving after adjourning the House during the Winter Session on Wednesday. ANI

Houses had written to the Chair on Tuesday asking for a debate on the subject. According to sources, the Lok Sabha's Business Advisory Committee is likely to take a call on the issue during its meeting on Monday.

Slogans raised

In the Lok Sabha, the Opposition trooped into the Well of the House and shouted slogans on the Adani allegations as well as

on the recent violence in Sambhal in Uttar Pradesh, even as Speaker Om Birla proceeded with the Question Hour.

"Let Question Hour run, then we can discuss your issue," Mr. Birla said.

The Opposition continued with its protests, however, and the Speaker adjourned the House till noon. "You do not want the House to function? He [newly elected BJP MP

Arun Govil] is asking a question for the first time. You are trying to disrupt the House in an organised manner," he said. When the House reassembled at noon, Dilip Saikia, who was in the Chair, said the Speaker had disallowed all adjournment motions. After the laying of papers, Mr. Saikia adjourned the House for the day.

In the Rajya Sabha, Chairman Jagdeep Dhankhar rejected 18 notices moved by the Opposition under Rule 267 which requires the suspension of the day's business to discuss the issues mentioned in the notices. The notices called for discussions on the demand for the "constitution of a [Joint Parliamentary Committee] JPC to investigate the alleged misconduct, including corruption, bribery, financial irregularities of the Adani Group in connivance with other authorities", the vio-

lence in Sambhal, and the "rising" incidents of crime in the national capital.

The proceedings were briefly adjourned due to Opposition protests. When the House re-assembled at 11.30 a.m., however, there were identical scenes. This prompted Mr. Dhankhar to adjourn the proceedings for the day, saying the "House is not in order".

"Upper House needs to reflect and follow well-established traditions that ruling of the Chair requires deference and not cause differences. I have, in detail, given reasons why, in these situations, notices are not being accepted," Mr. Dhankhar said while rejecting the notices.

"As I have reiterated on several occasions, I thought it wise to bestow focused attention given the situation that we are entering the last quarter of the century of adoption of the Constitution," he said.

What Is Adjournment?

- Adjournment refers to the suspension of a parliamentary sitting to resume at a later time or date.
- It is typically done for a break, or when proceedings need to be paused due to disruptions or other reasons.
- The Speaker or Chairman of the House announces the adjournment.

- ➡ It can be temporary, to resume on the same day, or for a longer period.
- ➡ Adjournment does not end the session but pauses it.

Similar Terms:

➡ Session

- A defined period when Parliament convenes to carry out legislative and other duties.
- A session includes multiple sittings, separated by adjournments, and ends with prorogation or dissolution.

➡ Prorogation

- Marks the formal end of a parliamentary session by the President on the advice of the Council of Ministers.
- All pending bills and motions lapse unless carried over, except those in a joint committee or referred for consideration.
- No further meetings of the House occur until the next session is summoned.

➡ Adjournment Sine Die

- Indicates the adjournment of a House without setting a date or time for its next sitting.
- Effectively suspends parliamentary business indefinitely until the Speaker or Chairman summons the House again.

➡ Dissolution

- Exclusively applicable to the Lok Sabha, it ends the House's tenure either on completing its term or earlier by the President's decision.
- Requires fresh elections to form a new Lok Sabha, and all pending bills, except financial ones, lapse.

➡ Postponement

- Refers to delaying the consideration of specific bills, motions, or discussions to a later time or date within the same session.
- Maintains the subject's relevance without allowing it to lapse.

UPSC Mains Practice Question

Ques : Explain various terms in parliamentary procedures, such as prorogation, adjournment sine die, suspension of sitting, and dissolution. Discuss their significance in the context of legislative functioning and the continuity of parliamentary business. (150 words/10m)

Moiré materials, created by twisting 2D layers of materials like graphene, exhibit unique electronic properties, including superconductivity.

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 (tWSe₂), 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

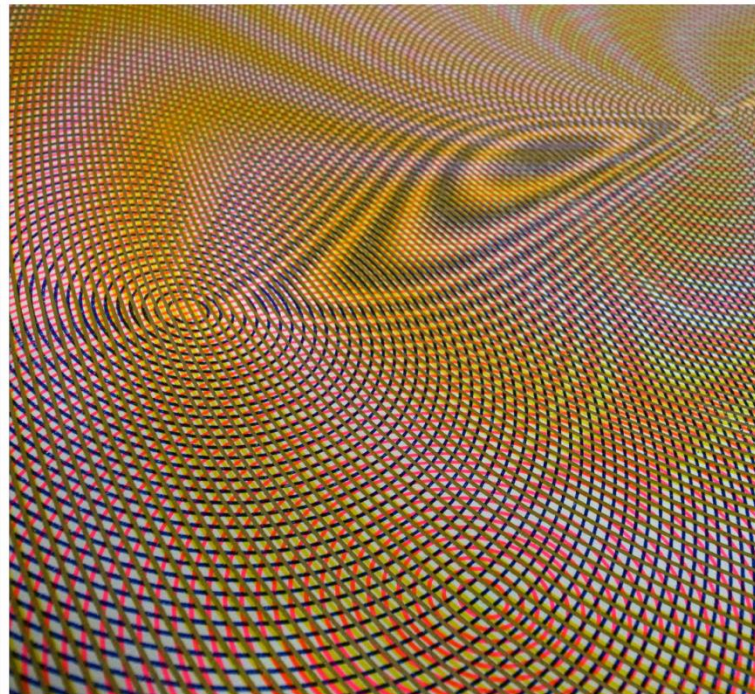
The electronic structure of a material describes how electrons in the material behave. The energy bands are a way to visualise the energy the electrons possess and how fast they move within the material.

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



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)

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 tWSe₂ 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 tWSe₂ 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 tWSe₂ 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, tWSe₂ 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 tWSe₂ 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, tWSe₂ actually has a robust superconducting state – and one that's different from how the property emerges in graphene-based moiré materials. For tWSe₂, 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, tWSe₂ 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.

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Daily News Analysis

- Recent research on twisted bilayer tungsten diselenide (tWSe_2) reveals robust superconductivity, advancing our understanding of quantum materials and semiconductor applications.
- 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.

Introduction to Moiré Materials

- Moiré materials are formed by stacking two layers of 2D materials, such as graphene, and twisting one layer slightly.
- These materials exhibit exotic electronic and quantum properties, including superconductivity.

Semiconductor Moiré Materials and Superconductivity

- Recent studies in Nature report that moiré materials made from semiconductors like twisted bilayer tungsten diselenide (tWSe_2) can also exhibit superconductivity.
- This discovery challenges the prior belief that superconductivity in moiré materials is exclusive to graphene.

Moiré Pattern and Flat Bands

- The twist between layers creates a moiré pattern, altering the material's electronic structure and forming flat bands.
- Flat bands lead to uniform electron energies, fostering strong electron-electron interactions and the formation of Cooper pairs, essential for superconductivity.

Key Findings on tWSe_2

- tWSe_2 transitions to a superconducting state at a critical temperature of approximately -272.93°C , comparable to high-temperature superconductors.
- Superconductivity in tWSe_2 is driven by electron-electron interactions and half-filled electronic states, differing from graphene-based systems.
- The material also transitions to an insulating state under certain electronic conditions and shows a coherence length 10 times longer than other moiré materials.

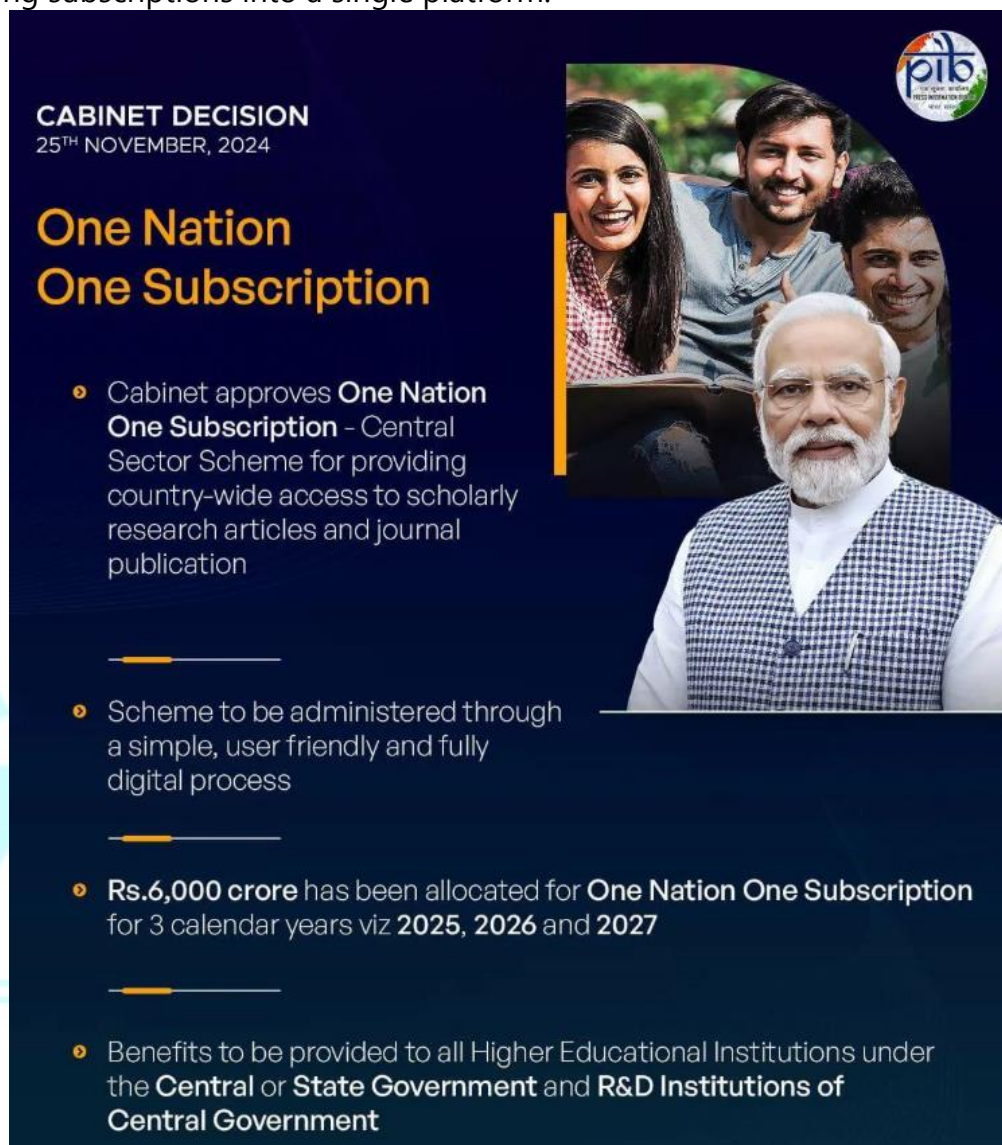
Implications

- The study highlights the stability of tWSe_2 's superconducting state and its potential for exploring semiconductor-based superconductors.
- It provides insights into the effects of twisting 2D layers on electronic structure and superconductivity.

PIB : Prelims Facts : One Nation, One Subscription

The Union Cabinet has approved the "One Nation One Subscription" (ONOS) initiative, allocating ₹6,000 crore to centralise access to 13,000 scholarly journals for over 6,300 government-run higher education institutions in India.

- ➡ The scheme aims to improve journal accessibility, reduce costs, and enhance research capabilities by consolidating subscriptions into a single platform.



CABINET DECISION
25TH NOVEMBER, 2024

One Nation One Subscription

- Cabinet approves **One Nation One Subscription** - Central Sector Scheme for providing country-wide access to scholarly research articles and journal publication
- Scheme to be administered through a simple, user friendly and fully digital process
- **Rs.6,000 crore** has been allocated for **One Nation One Subscription** for 3 calendar years viz **2025, 2026 and 2027**
- Benefits to be provided to all Higher Educational Institutions under the **Central or State Government** and **R&D Institutions of Central Government**

Analysis of News:

➡ **Introduction of ONOS Initiative**

- The Union Cabinet has approved the "One Nation One Subscription" (ONOS) scheme with a budgetary allocation of ₹6,000 crore.
- This initiative aims to centralise journal subscriptions and provide equitable access to academic resources for India's higher education institutions (HEIs), benefiting research and education.

Daily News Analysis

➡ Existing Journal Access System

- HEIs currently access journals through 10 separate library consortia under various ministries and individual subscriptions.
- For example, the INFLIBNET Centre oversees the UGC-Infonet Digital Library Consortium, granting access to select journals.
- Approximately 2,500 HEIs collectively access 8,100 journals through these fragmented systems.

➡ Key Features of the ONOS Scheme

- ONOS seeks to integrate journal access for 6,300 government-run institutions under a single platform operational from January 1, 2025.
- The platform will provide access to 13,000 journals from 30 renowned international publishers, including Elsevier, Springer Nature, Wiley, Taylor & Francis, IEEE, and others.
- INFLIBNET has been designated as the implementing agency, ensuring a streamlined registration and access process for institutions.

➡ Financial Planning and Cost Efficiency

- The central government has negotiated significant cost reductions, bringing the annual subscription cost from ₹4,000 crore to ₹1,800 crore for 13,000 journals.
- The ₹6,000 crore funding will cover subscriptions for three calendar years (2025-2027).
- Institutions desiring additional journals beyond the platform's offerings can subscribe to them independently.

➡ Benefits of the ONOS Initiative:

- **Increased Access:** Extends access to high-quality journals for nearly 1.8 crore students, faculty, and researchers across government universities, colleges, research bodies, and Institutions of National Importance (INIs).
- **Cost Savings:** Avoids duplication of journal subscriptions, thereby eliminating redundant expenditure.
- **Enhanced Bargaining Power:** A unified subscription model provides better leverage in negotiations with publishers, ensuring affordability.
- **Data Insights and Utilisation:** Enables the government to track journal usage, promoting efficient resource utilisation and encouraging underperforming institutions to engage more with the platform.

➡ Rationale for ONOS

- The initiative aligns with the National Education Policy (NEP) 2020, which emphasises the need for robust research infrastructure to position India as a global knowledge hub.
- NEP 2020 recommended the establishment of a National Research Foundation (NRF) to foster innovation and research excellence. ONOS supports this vision by enhancing access to scholarly resources.

➡ Development and Implementation

Daily News Analysis

- In 2022, the government formed a core committee of secretaries chaired by the Principal Scientific Advisor, followed by a cost negotiation panel to streamline discussions with journal publishers.
- The Anusandhan National Research Foundation (ANRF) was also established in early 2024 to strengthen research and development.

Way Forward

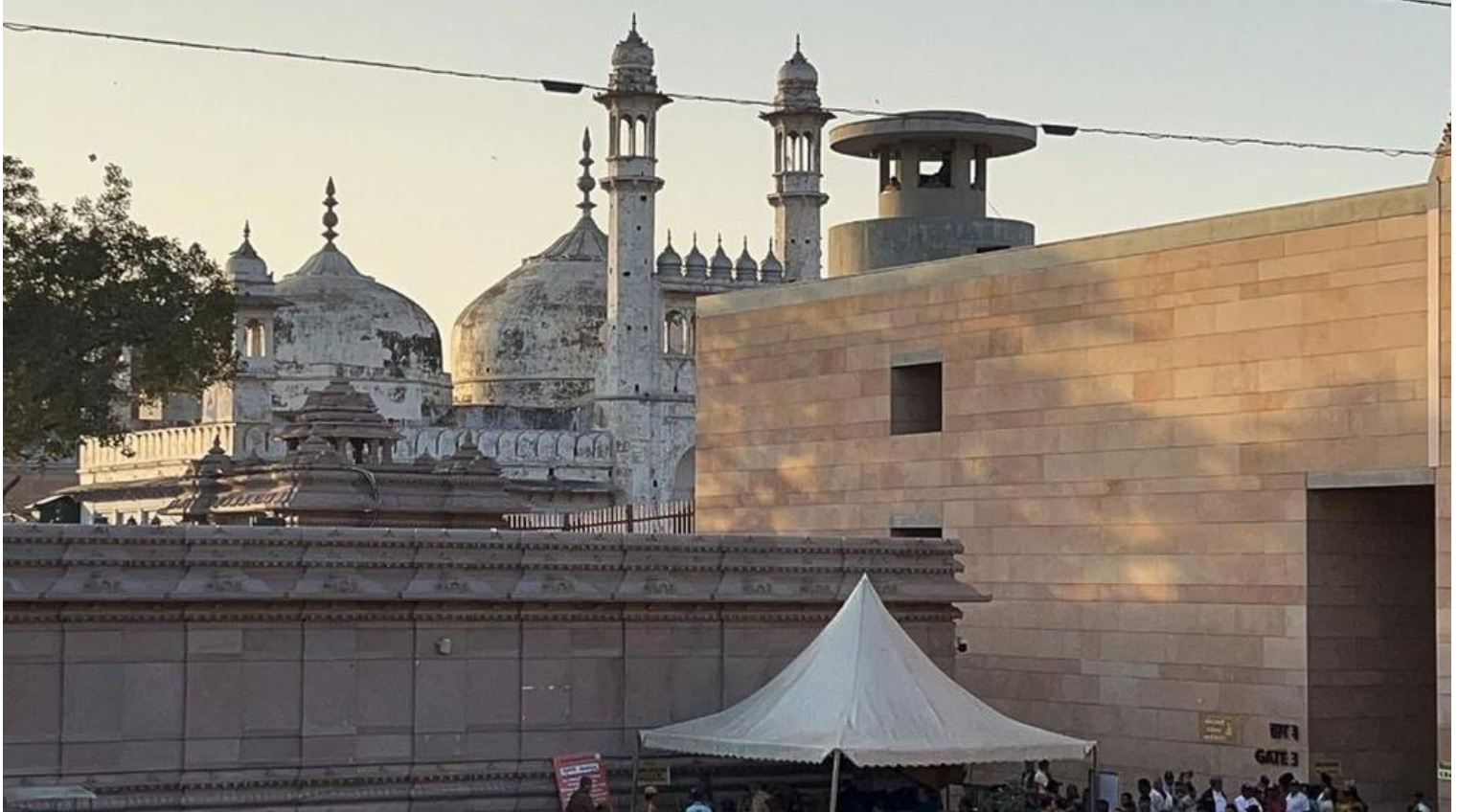
- The government plans to negotiate Article Processing Charges (APCs) with publishers to reduce costs for publishing research papers. APCs are fees authors pay for publishing in open-access journals.
- Subject-specific expert groups will facilitate these negotiations to ensure affordability for Indian researchers.
- A decision on whether to extend the ONOS benefits to private HEIs is still pending.

Conclusion

- The ONOS initiative is a transformative step towards democratising access to academic resources, reducing redundancies, and fostering a research-oriented ecosystem across India's HEIs. It promises to streamline costs, expand accessibility, and significantly boost research and innovation in the country.

In News : Places of Worship (Special Provisions) Act, 1991

The recent riots in Sambhal in Uttar Pradesh once again question whether the Places of Worship Act, 1991, passed to prevent exactly such communal conflagrations, is as good as dead.



About Places of Worship (Special Provisions) Act, 1991:

- It is described as "An Act to prohibit conversion of any place of worship and to provide for the maintenance of the religious character of any place of worship as it existed on the 15th day of August 1947, and for matters connected therewith or incidental thereto."
- No person can convert any place of worship of any religious denomination or any section thereof into a place of worship of a different section of the same religious denomination or of a different religious denomination.
- It also prohibits court intervention in problems concerning the religious nature of such places.

Exemption:

- The disputed site at Ayodhya was exempted from the Act. Due to this exemption, the trial in the Ayodhya case proceeded even after the enforcement of this law.
- Besides the Ayodhya dispute, the Act also exempted:
- Any place of worship which is an ancient and historical monument, or an archaeological site covered by the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- A suit that has been finally settled or disposed of.

- Any dispute that has been settled by the parties or conversion of any place that took place by acquiescence before the Act commenced.



Schooling in India in times of poor air quality

In a stark reminder of the COVID-19 pandemic period, schools in Delhi State, in mid-November 2024 – as a part of the Graded Response Action Plan (GRAP) to tackle air pollution, which is triggered when the Air Quality Index (AQI) is “poor” – had been asked to switch from physical to online mode. While other restrictions imposed as a part of GRAP might have an impact on air quality, the decision to switch schools to online mode needs to be examined for its scientific rationale, practicability, and benefits and risks.

Poor air quality in many north Indian States is harmful for any age group and not just children. The harmful health effects of poor air quality are on a continuum from the moment the AQI crosses normal range. Children (and everyone in any age group) should be protected from poor air quality the moment the AQI crosses 50, which is considered ‘good’ air quality by Indian norms. However, there are only a few days in a year when the AQI is within acceptable limits. In 2024, till now, there has not been even a single day with ‘good’ air quality in Delhi; there was just one such ‘good’ air quality day in 2023. Alongside, it is naive to believe that an AQI that is more than 400 (classified as ‘severe’ or ‘severe plus’) is harmful and anything below this is not. This arbitrary and high cut off does not help except inadvertently normalising the harmful health effects of air quality that is in the range of AQI 51 to 399.

More importantly, most children in Delhi or other parts of the country are likely to have the same air quality inside their homes or in their schools. For some underprivileged children, air quality in the classroom might be better than at home as many schools have air purifiers. The idea of having online classes due to poor AQI puts all children at an additional disadvantage of learning loss and nutritional loss (as many children get mid-day meals in schools), while there is no respite from the health impact.

It is widely known that online classes are not a replacement for school-based learning and the only beneficiaries here are EdTech platforms and Apps. Then, the younger children are not supposed to have exposure to screen time. Therefore, when they are forced to attend online classes, they are being exposed to more harmful behaviour than receiving any possible or perceived benefit. In the three years of the COVID-19 pandemic, all of us have learnt that schools are not the places where children read only books; there is life learning. Therefore, the focus has to be on keeping schools functional and ensuring learning continuity. There was an article related to this, in this daily, by one of the writers: “The pathology of school closure in India”, February 16, 2022.

The oversold idea of face masks

Poor air quality nearly always brings up the issue of face masks. Even before GRAP stages III and IV recommended the suspension of physical classes,



Dr. Chandrakant Lahariya

a medical doctor who specialises in early childhood development, lifestyle diseases and preventive medicine. He has over 16 years of work experience with the World Health Organization and UNICEF



Dr. Randeep Guleria

a former Director of the All India Institute of Medical Sciences (AIIMS), New Delhi and a specialist in respiratory medicine

Considering scientific rationale and the benefits and risks, the functioning of schools needs to be delinked from Graded Response Action Plan measures

a few schools sent out advisories to parents that children should wear face masks in order to attend schools. Though it was argued that these advisories were to provide guidance, what was forgotten was that such advisories from schools became an ‘informal mandate’ for children and parents. Such a uniform advisory for all children to wear a face mask is not fully backed by science. As far as children are concerned, even during the COVID-19 pandemic, masks were not recommended for children who were younger than five years for various scientific reasons and utilising empirical data. For those between six to 11 years, masks were advised (and not mandated). There is no rationale for anyone to wear face masks if the set-up has air purifiers. In short, the face mask wearing guidance for children has to have a nuanced and personalised approach. Therefore, schools should refrain from issuing such advisories, which should come only after guidance from medical experts.

Adopt a science-based approach

First, schools should not be made to switch to online classes, no matter what the level of AQI is. The focus should be on keeping the school functional and ensuring learning continuity. This could be done with some mitigants such as completely halting all outdoor activities in schools when the AQI is poor. Everyone should take appropriate personal protective measures, such as the use of purifiers and face masks, taking into account recommendations by age, and pre-existing health issues. Those who have any pre-existing respiratory health issue are likely to benefit more from mask wearing, specifically in a polluted and open space.

Second, to attend school, there is no need for a uniform directive for mask wearing. Schools are not the source of pollution. Arguably, air quality in schools is similar to the homes of children. Therefore, it does not make any sense to do anything differently in school than what is done at home. So, if children and parents wear a face mask at home, they can wear it at school as well. Else, no additional mandatory mask wearing measure is needed. There is a need to remember that face masks can also have negative effects such as causing a skin allergy and other discomforts. So, one should keep in mind the benefits and the associated risks. Also, except for medical recommendations, children younger than 12 years should not be made to wear N95 masks. During periods of severe or above AQI, children who have pre-existing health issues or any other parents who wish to keep their children at home, should be given an ‘opt-out’ option from physical classes, and the rest of the children should have the opportunity for learning continuity.

Third, in schools or other settings which have functional air purifiers, mask wearing is not going to provide any additional advantage. For such settings, i.e., schools, ensuring that the classroom

doors and windows are closed properly and switching on air purifiers at least an hour before children arrive would ensure ‘good’ quality air.

Fourth, ‘online schooling’ is an oxymoron – it is not school if teaching is online. The option of hybrid classes should not be interpreted conveniently by schools. Also, other than air quality, there are other reasons such as foggy or cold winter days, which many schools exercise as a reason for switching to online or hybrid classes. These should be actively discouraged and teaching should be in physical mode for all parents, who are willing. In fact, it is problematic that school classes are often referred to as ‘offline’ or ‘online’, placing electronic devices at the centre of teaching and learning. We need to break this mode of thinking. Therefore, in future, if and when the government or any authority fails children by passing an order to switch to online classes, the management in every school needs to come up with innovative approaches to ensure that learning is not in front of a mobile or computer screen.

Fifth, poor air quality is a reminder that anyone who has pre-existing health or respiratory conditions should take better care of their health. This means having a routine checkup and a regular follow-up visit with health-care providers. Preventive interventions such as annual influenza vaccination or age-appropriate recommended vaccines like pneumococcal, measles, *Haemophilus influenzae* Type b (Hib) are administered to those who need it.

Policy must be people-centric

From a larger social angle, most of the actions recommended as a part of GRAP, adversely and disproportionately, impact the poor and the vulnerable in terms of wages (for the poor and the marginalised) as well as learning and nutrition (for children) losses. This is a reminder that whatever is done in the name of the policy should have a people-centric and pro-poor focus. Air quality and school functioning need a nuanced approach. India had one of the longest closures of schools during the COVID-19 period and we need to learn from those mistakes. There was another article on this, in this daily, by one of the writers: “Building back to avert a learning catastrophe”, April 28, 2022.

Schools are not the source of air pollution. Rather, there is far greater loss than benefit from school closure. While there are valid reasons for implementing other measures under GRAP to improve the AQI, closing schools for physical classes makes the least sense. It has happened for the last eight years, but now is the time that school functioning is delinked from GRAP measures. Nelson Mandela had said, “There can be no keener revelation of a society’s soul than the way in which it treats its children.” When it comes to handling air quality and the functioning of schools, Indian States and society seem to be failing in their responsibility and their duties.

GS Paper 02 : Social Justice – Education,

GS Paper 03 : Environment

UPSC Mains Practice Question: Discuss the impact of air pollution on education in India, particularly in the context of school closures under measures like the Graded Response Action Plan (GRAP). Suggest alternative strategies to ensure learning continuity and safeguard children's health. (150 Words /10 marks)

Context :

- Delhi schools were asked to switch to online mode under the Graded Response Action Plan (GRAP) due to worsening air quality.
- The decision raises concerns about its effectiveness, as indoor and outdoor air quality are comparable for most children.
- It also leads to learning and nutritional losses, disproportionately affecting the vulnerable.

Air Quality and School Closures: A Misguided Measure

- Schools in Delhi were asked to switch to online mode under GRAP due to poor air quality (AQI classified as "poor").
- Poor air quality affects all age groups, not just children. The harmful effects begin when AQI crosses 50, which is rarely achieved in Delhi.
- AQI levels under 400 are still harmful, yet a high cut-off normalizes moderate pollution levels (51–399).

Air Quality and Indoor Environments

- For most children, air quality inside homes and schools is similar.
- For underprivileged children, schools often provide better air quality due to air purifiers, along with essential nutrition through mid-day meals.
- Shifting to online classes worsens learning and nutritional losses without reducing exposure to pollution.

Ineffectiveness of Online Learning

- Online classes cannot replace school-based learning and disproportionately benefit EdTech platforms.
- Screen time for younger children can lead to harmful behavior, outweighing any perceived benefits of online education.
- Schools are essential for holistic development, not just academics, and should remain functional.

Face Masks: Overused and Misapplied

- Some schools issued informal mandates for children to wear masks, which lacks scientific backing.
- Masks are not advised for children under five, and recommendations for those aged six to 11 were not mandatory, even during COVID-19.
- Mask advisories should be nuanced, considering air purifiers in classrooms and specific health conditions.

Adopting Science-Based Mitigation Measures

- Physical schooling must continue with measures such as halting outdoor activities and ensuring well-functioning air purifiers.
- Mandatory mask-wearing is unnecessary in schools with air purifiers but could benefit children with pre-existing health issues.
- Hybrid and online teaching models should not replace physical classes as they lead to significant learning deficits.

Preventive and Proactive Healthcare

- Routine health checkups and vaccinations, such as influenza and pneumococcal vaccines, should be promoted for vulnerable groups.
- Children with respiratory conditions should be given the option to opt out of physical classes during severe AQI days.

Policy Must Focus on Equity

- GRAP measures disproportionately harm vulnerable groups, especially children and the poor.
- Policymaking should prioritize the well-being and development of children, avoiding the mistakes of prolonged school closures during the pandemic.

Conclusion

- Schools are not major contributors to air pollution; their closure causes more harm than good.
- Policies should delink school closures from GRAP, emphasizing the importance of keeping schools open to safeguard children's education and health.