

**The Hindu Important News Articles & Editorial For UPSC CSE**

**Friday, 31 Jan, 2025**

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This news covers various public health concerns: bird flu variant tracking, the impact of menstruation on South Asian women, and the link between weather/climate change and Salmonella outbreaks.

## EU tracks bird flu virus variants over rising threat to humans

### SNAPSHOTS

**T**wo European regulators said they were tracking variants of the bird flu virus due to the threat of the pathogen adapting to spread between humans and triggering future pandemics. The European Centre for Disease Prevention and Control (ECDC) and the European Food Safety Authority also issued recommendations drawing on genetic analyses and human case studies to outline current risks from the virus. ECDC said its experts identified 34 genetic mutations that might increase the potential of avian influenza viruses spreading to humans. **Reuters**

### Periods 'keep 20% of South Asian females from their daily activities'

Nearly 20% of women and girls in south Asia abstain from regular daily activities during periods, according to a study published in *The Lancet Global Health* journal. Researchers, including those from the University of Melbourne, Australia, found



An awareness programme on menstruation in Bengaluru.

that girls aged 15-19 years are the most affected.

They suggested that missing daily activities during menstruation can interfere with a woman's quality of life and contribute to gender inequalities. The researchers also found that using contraceptives, especially hormonal methods, reduced absences during menstruation for women of all ages, suggesting that symptoms such

as heavy bleeding or pain could be keeping women away from pursuing daily activities. The findings provide new evidence to inform future menstrual health research and public health interventions, the authors said. **PTI**

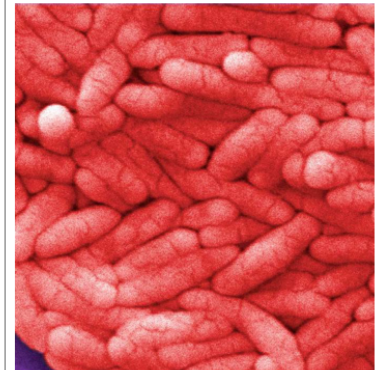
### Weather linked to heightened risk of Salmonella outbreaks: study

According to new research from the University of Surrey, climate change has an impact on *Salmonella* spread. *Salmonella* is a type of bacteria that can cause food poisoning. *Salmonella* can cause diarrhoea, fever, and stomach cramps, and it is most prominent in areas with poor sanitation and hygiene.

In the study, published in the *Journal of Infection*, researchers found warmer temperatures (above 10 degrees Celsius), relative humidity, dewpoint temperature (between 7-10 degrees Celsius), and longer days (over 12-15 hours) were identified as key weather factors associated with an increase in *Salmonella* cases, irrespective of geographical location.

Dr. Laura Gonzalez Villeta, the first

author of the study and researcher at the University of Surrey, said: "the study highlights how weather plays a significant role in *Salmonella* outbreaks and provides a valuable tool for predicting future risks and tailoring interventions, particularly in the context of climate change." **ANI**



Under a magnification of 12000X, this scanning electron micrograph shows a large grouping of *Salmonella* bacteria. **REUTERS**

## Tracking Bird Flu Variants

- ➔ European health agencies are monitoring bird flu virus mutations that may increase the risk of spreading among humans.
- ➔ Experts have identified 34 genetic mutations that could raise the possibility of human infections.
- ➔ Authorities are using genetic analysis and case studies to assess current risks and provide recommendations.

## Menstrual Health Challenges in South Asia

- ➔ About 20% of women and girls in South Asia refrain from daily activities during menstruation.
- ➔ Teenagers aged 15-19 are the most affected by menstrual restrictions.
- ➔ Researchers suggest that menstrual discomfort may contribute to gender inequalities.
- ➔ Using hormonal contraceptives has been linked to fewer activity restrictions during menstruation.

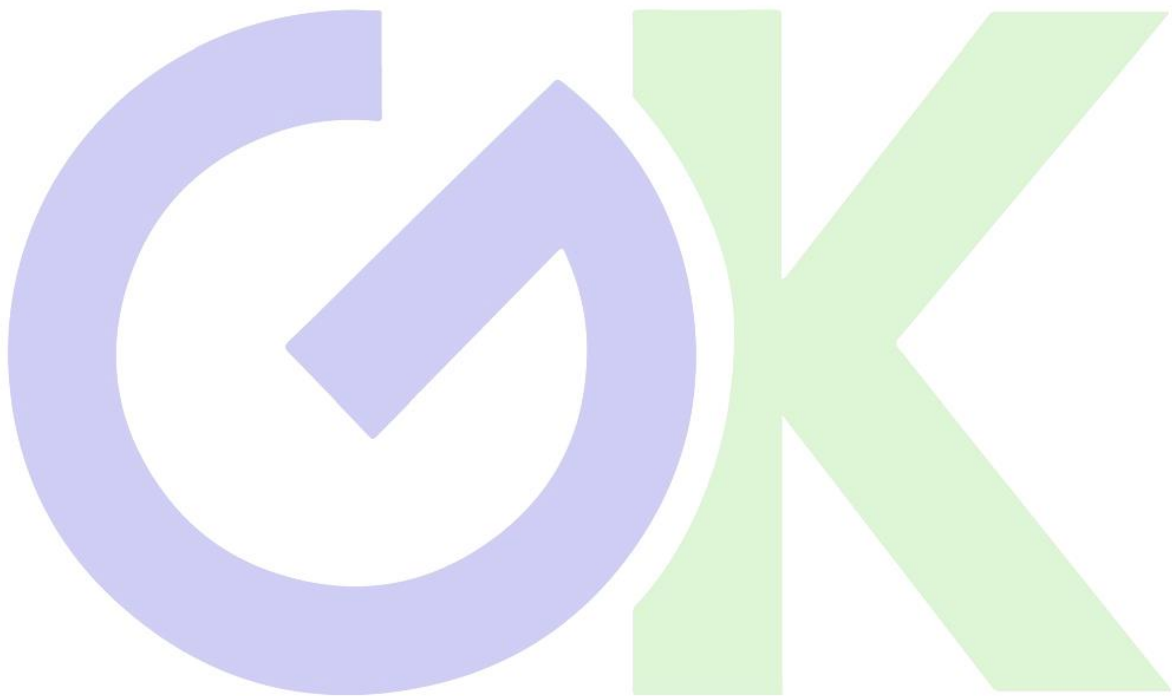
## Climate Change and Salmonella Outbreaks

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## Daily News Analysis

- Warmer temperatures, humidity, and longer daylight hours increase the spread of Salmonella bacteria.
- The bacteria cause food poisoning, leading to fever, diarrhoea, and stomach pain.
- The findings emphasize the role of climate in foodborne disease outbreaks and highlight the need for preventive measures.



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The WHO has recommended reducing sodium intake by promoting low-sodium salt substitutes (LSSS) to combat hypertension and cardiovascular diseases.

## What WHO's recommendation for low sodium salt means for India

The WHO released guidelines recommending lower-sodium salt substitutes, essentially including potassium chloride and reducing percentage of sodium chloride in table salt. This comes after the international body strongly recommended reducing sodium intake to less than 2g a day

Ramya Kannan

One of the initial heroes of what was possibly the most successful and biggest public health campaigns in the country was salt. Introduced, fortified with iodine, in the 1950s, it marshalled a public health amelioration that improved the lives of people across generations, nearly wiping out iodine deficiency in India (except in a few hard-to-reach regions) and its vast array of attendant problems, including the slowed growth of children with hypothyroidism. Now, it seems as if salt's time has come, once again, to effect major health changes in the population, improving the health of Indians all over again.

The WHO released a set of guidelines on Sunday recommending the use of lower-sodium salt substitutes (LSSS), essentially including potassium chloride and reducing the percentage of sodium chloride in table salt. This comes after the international body strongly recommended reducing sodium intake to less than 2 g/day. Notably, the WHO has proposed to launch this LSSS revolution from within homes, providing its recommendations for table salt that is used in households. The recommendation does not pertain to salt used in packaged foods or foods cooked outside of home. Also, this recommendation is for adults (not pregnant women or children) and excludes individuals with kidney impairments or with other conditions that might compromise potassium excretion.

The WHO, however, with this set of guidelines, is talking to not just the people, but hopes to address and provide guidance on the use of low-sodium salt substitutes for policy-makers, programme managers, health professionals, and other stakeholders in their efforts to reduce sodium intake and reduce the risk of hypertension and related NCDs through a range of policy actions and public health interventions.

### Salt's impact on the body

Why is salt important, and why is it that salt has again become a vehicle to bring about sweeping public health behaviour change. To answer that, we would have to look at the widespread use of salt, and its impact on the human body itself. Sodium, the primary ingredient in salt, hitches a ride with water and travels the bloodstream. Sodium forces the body to retain water and more salt naturally means more water in the blood vessels, which increases the pressure, literally and figuratively. "Reducing salt consumption, therefore, reduces the load on the system, by significantly decreasing the volume in the blood, thus impacting directly, positively on blood pressure," says Priya Chockalingam, founder, Cardiac Wellness Institute, Chennai. "This is significant, particularly given the culture in India, where topping up with salt is almost a given. If you reduce your consumption of salt, there is no doubt that it will have an impact on cardiovascular health and prevent strokes," she adds.

Hypertension is also a major risk factor for atherosclerosis, where fatty deposits (plaques) build up inside the arteries, causing them to narrow and harden, thereby restricting blood flow and



Reducing salt consumption reduces the load on the system. FILE PHOTO

increasing the risk of getting heart attacks and stroke. Excessive salt consumption also leads to vascular stiffness, making blood vessels less flexible. Potassium also improves vascular function. "There is no doubt that any reduction in salt consumption is good to prevent atherosclerosis. The benefits of low sodium salt substitutes are quite wide ranging, and will bear testing out further on project mode," says J. Amalorpavanathan, vascular surgeon, and member, Tamil Nadu State Planning Commission.

The statistics are sobering and if we truly paid attention to these facts, we might have as a race decided to leave salt out of our diets. Globally, each year, 8 million deaths are associated with poor diets, and of these, 1.9 million are attributable to high sodium intake. Way back in 2013, an updated systematic

**While the benefits of a low sodium salt are plentiful, experts also caution that upping potassium intake is not for all, particularly those with kidney disease**

review of studies (published in the *British Medical Journal*), where salt was reduced by 4.4 g/day for at least 4 weeks found that systolic blood pressure was reduced by 4 mmHg and diastolic blood pressure by 2 mmHg, having a positive impact on cardiovascular health.

Studies from across the world have proven this, repeatedly, prompting the WHO to recommend limiting the sodium intake per person to below 2 grams per day to reduce blood pressure and risk of CVDs. Reducing salt consumption is an effective way to reduce



The WHO recommends limiting sodium intake per person to below 2 grams per day to reduce blood pressure and risk of cardiovascular diseases. AFP

noncommunicable diseases (NCDs) such as cardiovascular diseases (CVDs), and chronic kidney disease by lowering blood pressure. It also lowers the risks of other conditions associated with high sodium intake, such as gastric cancer, the guideline says.

The Chennai-based Sapiens Health Foundation, last year, launched the 'Losalter Group', emphasising the need to cut salt intake and also took online, a website to create awareness on the impact of salt on health. Rajan Ravichandran, chairman of the foundation, said the Losalter Group will create awareness on the problems caused by an excess consumption of salt. "We will train 300 physicians throughout the country. They will be educated on salt and health and given toolkits to propagate the message to the people," he explains. He adds that the onus of reducing salt intake is with the public, government, and the food industry, while stressing on 'signal labelling' for food products, in order to guide people to make healthy choices.

Vivekanand Jha, executive director, The George Institute for Global Health in India, terms this initiative of the WHO as "killing two birds with one stone", particularly in the Indian context. "While the consumption of sodium in the salt comes down, there is also a perspective that the normal intake of potassium is low, substituting sodium with potassium will address this second issue as well, again with a beneficial impact on cardiovascular health," he explains.

### Low salt options are costly

While there are some brands that do sell low NaCl (sodium chloride) with KCl (potassium chloride added) in the market, the problem is that these products are more expensive than regular salt, that costs very little, Prof. Jha adds. "The way to change behaviour effectively is to change what is available to consume. Costs will also come down with wider use. Government policy must mandate use of low sodium salt alternatives in the country and the state should work with industry to ensure proper display (at eye level) of these alternatives on supermarket shelves and shops," he says.

While the benefits of a low sodium salt are plentiful, experts also caution that upping potassium intake is not for all, particularly those with kidney disease. The WHO makes it clear that those who have conditions that do not support increasing the consumption of potassium must stay away from the proposed alternative. However, Dr. Priya Chockalingam while agreeing that salt is grossly overused in India, adds that it is possible there is a huge population with undetected kidney disease, and to put them on a potassium enhanced salt diet might not be advisable.

She makes it clear that reducing sodium chloride consumption would, on the whole, be beneficial in India, given the staggering burden of cardiovascular and other non-communicable diseases including hypertension and diabetes.

But, it is equally essential to keep a watchful eye on the possibility of hyperkaemia (excess potassium levels in the blood), given poor health seeking behaviour in the country and undiagnosed cases of kidney failure, she adds.

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➔ WHO also highlighted India's high salt consumption and associated health risks.

## Historical Role of Salt in Public Health

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- Salt was introduced in India in the 1950s with iodine fortification, successfully combating iodine deficiency.
- This helped prevent hypothyroidism and other health issues, improving public health over generations.

### WHO's New Guidelines on Low-Sodium Salt Substitutes (LSSS)

- The WHO has recommended replacing sodium chloride in table salt with potassium chloride.
- The goal is to reduce sodium intake to below 2 grams per day to prevent hypertension and cardiovascular diseases.
- The guidelines target households but exclude packaged and restaurant foods.
- These recommendations apply to adults, excluding pregnant women, children, and individuals with kidney impairments.

### Impact of Salt on the Human Body

- Sodium retains water in the body, increasing blood volume and pressure.
- Reducing salt lowers blood pressure, reducing the risk of heart disease and strokes.
- Hypertension contributes to atherosclerosis, vascular stiffness, and cardiovascular diseases.
- Potassium helps improve vascular function, reducing arterial stiffness.

### Global and Indian Health Concerns

- High sodium intake is responsible for 1.9 million deaths globally each year.
- Studies show that reducing salt intake by 4.4g/day lowers systolic blood pressure by 4mmHg and diastolic pressure by 2mmHg.

### Initiatives to Reduce Salt Intake

- Sapiens Health Foundation has launched the 'Losalter Group' to raise awareness and train physicians.
- Experts suggest that reducing salt intake requires action from individuals, the government, and the food industry.

### Challenges in Implementing Low-Sodium Salt Alternatives

- Low-sodium salt options are costlier than regular salt, making them less accessible.

- ▶ Experts suggest government intervention to regulate pricing and ensure proper display of these alternatives in stores.

### **Concerns About Potassium-Based Substitutes**

- ▶ Potassium-enriched salts are beneficial but may be harmful to people with kidney diseases.
- ▶ Experts warn about the risk of hyperkalemia (high potassium levels) due to undiagnosed kidney issues in India.

### **Conclusion**

- ▶ Reducing sodium intake is essential for combating hypertension, heart disease, and stroke in India.
- ▶ Government policies, industry cooperation, and public awareness are key to promoting low-sodium salt alternatives while ensuring safety for all.

### **UPSC Mains Practice Question**

**Ques:** Discuss the health implications of high sodium intake in India and evaluate the feasibility of implementing low-sodium salt substitutes (LSSS) as recommended by the WHO. **(150 Words /10 marks)**

The European Central Bank (ECB) reduced its benchmark deposit rate by 0.25% to 2.75%.

# European Union holds auto talks to revive embattled car sector

The EU is under pressure to help a sector employing 13 million, accounting for 7% of the bloc's GDP, as it seeks to revamp the continent's lagging competitiveness; The car sector plunged into crisis on high manufacturing costs, a stuttering switch to EVs and increased competition from China

## NEWS ANALYSIS

**Agence France-Presse**  
BRUSSELS, BELGIUM

**E**U talks to relaunch Europe's embattled car industry are to get underway on Thursday, with automotive CEOs awaited in Brussels to discuss fines and competition from China.

The European Union is under pressure to help a sector that employs 13 million people and accounts for about 7% of the bloc's GDP, as it seeks to revamp the continent's lagging competitiveness.

Chaired by EU Chief Ursula von der Leyen, the so-called "strategic dialogue" will bring together carmakers, suppliers, civil society groups and others.

"The EU Commission recognises the urgency and severity of the situation, and the need for decisive action," the EU's executive body said in a note.

### Pro-business shift

The get-together comes as the commission is in the midst of a pro-business shift, with firms complaining that its recent focus on climate and business ethics resulted in excessive regulations.

On Wednesday, it unveiled a blueprint to revamp the bloc's economic model, amid worries that low productivity, high



**Go easy:** Carmakers have been calling for 'flexibility' on the steep emission fines. GETTY IMAGES

energy prices, weak investments and other ills are leaving the EU behind the United States and China.

The car industry in particular has been plunged into crisis by high manufacturing costs, a stuttering switch to electric vehicles (EV) and increased competition from China.

As a sign of goodwill, carmakers have been calling for "flexibility" on the steep emission fines they could face in 2025 – something the bloc's new growth blueprint said should be on the cards.

"I would personally find it strange to penalise players that we are otherwise trying to help for the benefit of competitors who do not have the same constraints, particularly Chi-



A blueprint has been unveiled to revamp the bloc's economic model, amid worries of low, productivity, high energy prices, weak investments leaving EU behind U.S., China

nese," the commissioner for industrial strategy, Stéphane Sejourne, told France's Le Figaro newspaper.

### Fossil fuel phase out

Under ambitious efforts to combat climate change, the EU introduced a set of emission-reduction targets that should lead to the sale

of fossil fuel-burning cars being phased out by 2035.

About 16% of the planet-warming carbon dioxide (CO2) gas released into the atmosphere in Europe comes from cars' exhaust pipes, the EU says.

As of this year carmakers have to lower the average CO2 emitted by all newly sold vehicles by 15% from 2021 levels or pay a penalty – with tougher cuts further down the road, according to clean transport advocacy group T&E.

The idea is to incentivise firms to increase the share of EVs, hybrids and small vehicles they sell compared to, for instance, diesel-guzzling SUVs.

But some manufacturers complain that is prov-

ing harder than expected as consumers have yet to warm to EVs, which have higher upfront costs and lack an established used-vehicle market.

"We want to stick to the objective... but we can smoothen the way," Ms. von der Leyen said on Wednesday.

### Sales and tariffs

Sales of electric cars slid 1.3% in Europe last year, accounting for 13.6% of all sales, according to the European Automobile Manufacturers' Association (ACEA), an industry group.

Announcements of possible job cuts have multiplied. Volkswagen reached an agreement with unions in December to slash 35,000 positions across its German locations by 2030.

Meanwhile the market share of Chinese electric cars has ballooned in the EU in recent years, reaching 14% in the second quarter of 2024, up from less than two percent in 2020.

Yet, critics say lifting the fines would unfairly penalise producers who have invested in order to comply.

It would also remove a key incentive for firms to speed up their electric transition at a time when Chinese manufacturers have raced ahead.

"It's sending a signal to European carmakers that they can slow down even though they are already late," said Lucien Mathieu

of T&E.

Fines aside, there are other ways Brussels could support the sector.

A senior EU official said incentives for businesses to buy electric are an option.

### Charging network

"Company fleets" account for more than half of new cars purchased in Europe, the official said.

The 27-nation bloc could also seek to improve a patchy charging network, modernise grids to allow for faster charging, bring down energy costs, cut regulations and loosen China's grip on battery production, analysts say.

### China tariffs

Brussels has already imposed extra import tariffs on China-made electric vehicles of up to 35.3% after an anti-subsidy investigation concluded Beijing's state support was unfairly undercutting European automakers. But in a sign of the lack of unanimity on the best course of action, the move, which was opposed by Germany and other EU members, is the object of a lawsuit by BMW, Tesla and several Chinese automakers.

The German car giant, which produces certain models in China, said the surcharges harmed "globally active companies" and "do not strengthen the competitiveness of European manufacturers".

➔ This marks the fifth rate cut since June 2023, aimed at supporting the struggling eurozone economy.

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➔ In contrast, the U.S. Federal Reserve kept its interest rates unchanged, despite pressure for cuts.

### **Economic Challenges in the Eurozone**

- ➔ The eurozone economy has been facing stagnation, with little to no growth in recent months.
- ➔ Major economies like Germany and France have experienced economic contractions, adding to concerns.
- ➔ High energy costs and a slowdown in manufacturing have significantly weakened overall economic performance.

### **What is Eurozone?**

- ➔ Everything You Need To Know About 31 January 2025 : Daily Current AffairsThe Eurozone, officially called the euro area, is a group of 20 European Union (EU) member states that have adopted the euro (€) as their common currency.
- ➔ These countries have formed a monetary union, meaning they share a single monetary policy overseen by the European Central Bank (ECB).
- ➔ Created in 1999 with 11 members, the Eurozone has expanded over time. It aims to facilitate trade, economic cooperation, and stability within the member states.

### **Inflation and Future Outlook**

- ➔ Inflation remains slightly above the central bank's target, causing concerns among policymakers.
- ➔ Despite the rise, experts anticipate inflation to decline in the coming months.
- ➔ The central bank is expected to continue reducing interest rates to support economic recovery.

### **Uncertainty Due to U.S. Policies**

- ➔ Policymakers are closely monitoring global trade developments to assess future risks.
- ➔ The possibility of new trade tariffs from the United States has created economic uncertainty.
- ➔ Potential tariffs on European imports could negatively impact trade and economic stability in the eurozone.



Ukraine is struggling to defend Pokrovsk and its coal mines from Russian advances, with local miners and soldiers facing hardships as the region's economy and infrastructure deteriorate amid war.

# Ukraine struggles to protect its last coal reserves from Russia's grasp

Ukraine's forces are fighting to protect their coal mines, which were once vital to country's industrial strength, as Russian troops move closer to key areas; the closure of major mines, including the Pokrovsk coalfields, has disrupted the local economy, leaving workers uncertain about their future

Agence France-Presse  
UKRAINE

Fighting desperately to cling to coal mines that were once the lifeblood of its industrial east, Ukraine's soldiers conceded they were struggling against intensifying Russian attacks.

"There is only so much we can do. No matter what super warriors are fighting in our ranks, the Russians outnumber us. It hurts," said the chief sergeant of Ukraine's 59th brigade, deployed in the Donetsk region, who goes by the call sign "San Sanych".

Russia's army is around six kilometres (four miles) from the centre of Pokrovsk, a formerly thriving mining hub on top of Ukraine's largest coal reserves.

## A painful blow

The capture of the city and surrounding mines – some of which are even closer to Russian positions – would be a painful blow to Ukraine's army, local communities and the national economy, compounding months of setbacks on the front.

Earlier this month, the area's main mine operator, Pokrovsk Coal, which employed 10,000 before the war, suspended operations. It was Ukraine's last



**Shifting ground:** An empty road in a village in the Donetsk region with hills of mine dump in the background, amid the Russian invasion of Ukraine, on January 22. AFP

Now some of its shuttered facilities in the village of Udachne are being used by San Sanych's brigade.

Hills of rock dump offer soldiers a vantage point over the surrounding terrain, while the caverns, shafts and basements provide underground safety. But they were unsure how long they would have enough men or ammunition to hold on.

Ukraine's eastern Donbas, the industrial heartland of the Soviet Union that Russia claimed in 2022 to have annexed from Kyiv.

With the closure of the Pokrovsk mines, many workers relocated, but others were left in limbo in mostly deserted villages just a few kilometres from the front lines.

Galyna Rodionova, a control panel operator in

creasingly dangerous.

"We would see flashes here, flashes there, booms here and there," the 39-year-old said.

"We kept working hard but we looked at each other, said, 'This is probably our last day here' and laughed."

Management sent most workers home, including Ms. Rodionova, after the mine was damaged in

by village – but life away from the mine felt alien.

"We grew up in these mines, we worked there and spent half of our lives in these mines. Everyone here is like that, in every city," she said, recounting gatherings to celebrate holidays and Miner's Day on 31 August.

As a little girl, Ms. Rodionova had been brought to the mines by her mother, who had no one to watch her while she worked.

Ms. Rodionova was proud of her work, a difficult job she had held for the past 12 years.

"It was hard work, but I liked working. I don't know if there was ever a day when I didn't work. I can't live without work," she said.

"You knew that you had a home, that you were earning money and could afford stuff. Now you don't know... We live day by day in these scary times," she said.

"Everything was shattered."

## Unrealistic reality

Some 10,000 people still live in Pokrovsk and the surrounding villages, local officials said – down from 82,000 before the war.

Yury, a mine worker employed by one of the few sites that remain open, is one of them.

cigarette before getting on the shuttle bus for a night shift.

"It is unrealistic to find a job other than mining in this city," 45-year-old underground electrician Maksym said.

Stepping out of the bus bringing him back from work at dusk, Mr. Maksym said he felt relatively safe in the deep underground tunnels that offered protection from strikes.

The main risk, he explained, was from hits to the transformers powering the mines.

"No power means no ventilation, which means there is not enough air," he said.

When that happens, the miners rush to climb hundreds of metres up ladders in a race to the surface for oxygen.

## 'Hard to leave'

Mr. Maksym, who like many comes from a mining family, said he would only leave if the mine closed.

"I understand that there is a war and that I need to run away. But the feeling that you were born here, that you have your own house and memories, that is a feeling that is hard to leave, no matter how bad things are" he said.

Moving would also mean not being able to visit the grave of his mother,

## Places in news:

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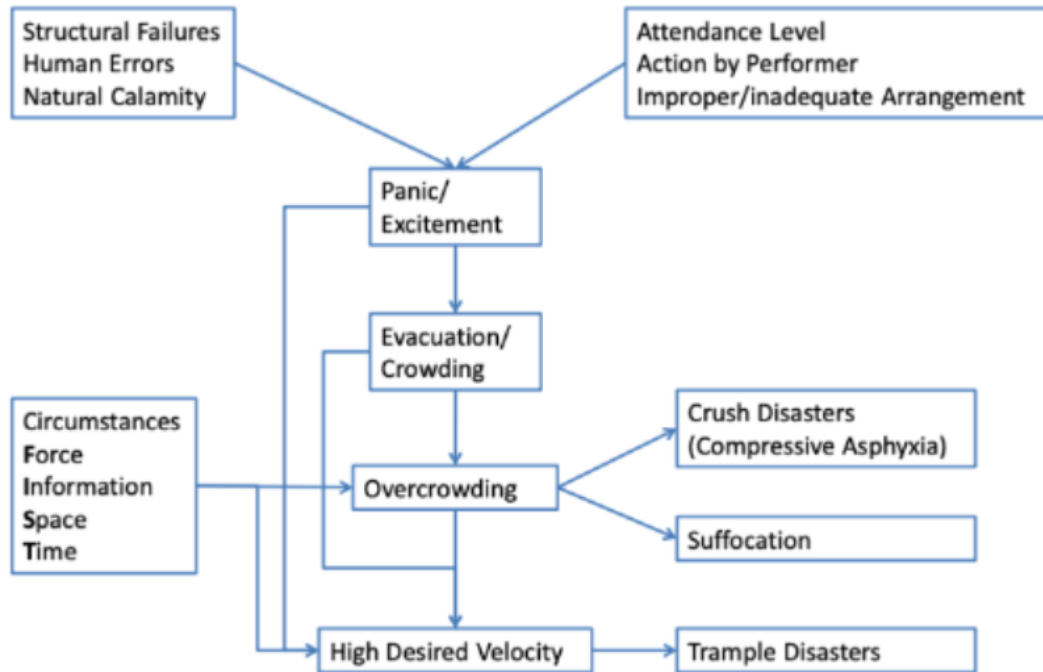
## Daily News Analysis

- ➡ **Pokrovsk:** Once a thriving mining hub in Ukraine, Pokrovsk is located above the country's largest coal reserves. It is now under threat from Russian advances, with its strategic mines vital to Ukraine's economy. The area has suffered extensive destruction, and its population has dwindled from 82,000 to about 10,000 due to the ongoing war.
- ➡ **Udachne:** A village near Pokrovsk, once home to many miners working in the Pokrovsk Coal mines. With the mines shut down, many workers have relocated, while others remain in limbo in largely deserted areas.
- ➡ **Donetsk Region:** A historically significant industrial area in eastern Ukraine, Donetsk is a focal point of the ongoing conflict. The region, rich in coal mines, is at the center of Russia's attempts to annex Ukrainian territory. The capture of key mining cities like Pokrovsk would deal a heavy blow to Ukraine's economy and military.

**In News : Mahakumbh Mela 2025 Stampede**

A stampede at the Mahakumbh Mela in Allahabad on January 29 resulted in 30 deaths and 60 injuries.

**Process of a Stampede**



Source- NDMA Disaster Guidelines

**Analysis of the news:**

**Causes of Stampedes**

- Stampedes are caused by structural weaknesses, poor crowd control, unexpected surges, and inadequate security.
- The NDMA report highlights factors such as excessive crowding beyond capacity, lack of proper barricading, poorly planned entry/exit points, and weak coordination among stakeholders.
- Sudden panic or excitement also accelerates crowd movement, leading to crushing and suffocation.

**Role of Crowd Behavior**

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## Daily News Analysis

- Crowd psychology plays a critical role in stampedes. Individuals often follow the actions of others, leading to a chain reaction.
- Poorly managed control measures, such as misdirected police actions, can escalate chaos.
- The NDMA suggests that a community-based crowd management approach is more effective than force-based control.

### Lessons from Past Stampedes

- Previous incidents, like the 2003 Nashik Kumbh and the 2005 Kalubai Yatra, reveal common failures: inaccurate crowd estimates, inadequate infrastructure, narrow and unsafe pathways, and lack of coordination among authorities.
- The presence of vendors, poor security, and illegal electrical connections also contributed to disasters.

### Strategies for Crowd Control

- Effective crowd management requires a balance between controlling inflow, regulating movement, and ensuring safe dispersal.
- Authorities must assess past crowd patterns, enforce mandatory registrations, and use technology for monitoring.
- Infrastructure improvements like staging points, clear pathways, and public announcements can significantly reduce risks.

### Need for Proactive Planning

- The NDMA stresses proactive and holistic planning for religious events. Where infrastructure expansion is not possible, improving waiting areas and regulating entry through online registration can help.
- Comprehensive information dissemination and coordination between stakeholders are crucial in preventing future stampedes.

### What are the Impact of these Stampedes?

- Stampedes at religious gatherings in India have significant impacts on local communities.
- Mentioned below are some of the major impacts.

## Daily News Analysis

1. **Trauma and Loss-** Witnessing a stampede tragedy and the resultant deaths and injuries causes immense trauma, especially for those who lost loved ones. For ex- Deadly stampede killing 121 people in Hathras.
2. **Economic Hardship-** The majority of victims in such stampedes come from lower castes and poor backgrounds. Their deaths leave families without primary breadwinners, causing economic hardship in the community. Also the cost of funerals and medical expenses further strain already limited resources.
3. **Erosion of Trust-** Repeated stampedes at Indian religious festivals due to similar failures further undermine faith in the ability of organizers to keep devotees safe.
  - **For ex-** Gross negligence like poor planning, with insufficient exits, inadequate crowd control, and lack of emergency preparedness, by organizers and authorities erodes trust in religious institutions.
4. **Loss of Social and Human Capital-** Many young children and women are the victims of these stampede tragedies. This leads to loss of the productive social and human capital of the country.

### UPSC Mains Practice Question

**Ques:** Frequent stampedes at religious gatherings in India highlight systemic failures in crowd management. Analyze the key causes and suggest effective measures to prevent such tragedies in the future. **(150 Words /10 marks)**

# The science is clear, crowd disasters are preventable

This week, in India, 30 people were killed in a deadly crowd crush that occurred at the Maha Kumbh. This writer's heart goes out to their families and friends. Tragedies such as this one have become far too common across the world at religious pilgrimages, sporting events, and even music concerts. As someone who studies crowd disasters, what makes them even more terrible is that they are almost entirely preventable.

Crowd crushes are dangerous, deadly, and immensely scary. They are also scientifically well understood, easy to predict, and inexpensive to prevent. Yet, they continue to occur with surprising frequency in highly modern societies. While this writer joins the people of India in mourning the shocking and senseless loss of life, it is her hope that governments and event organisers everywhere use this tragedy as an opportunity to commit to making the changes necessary to keep crowds safe.

## Linked to crowd density

Crowd crushes occur when the density of a crowd becomes too high. Scientific studies have repeatedly shown that, at crowd densities of five persons per square metre, there is a risk of crowd injuries, and that at seven people per sq.m or more, the likelihood of death or serious injury is high. Crowd density is strongly influenced by the physical space around the crowd. If, for example, a crowd must navigate or gather in a space that is too small, crowd density can increase to dangerous levels rapidly and become deadly. Preliminary reporting from the Maha Kumbh suggests that this is precisely what happened there: a large crowd developed behind a barrier, compressing its members into a dangerous density with tragic consequences.



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Crowd crushes are scientifically well understood, easy to predict, and inexpensive to prevent

Similar disasters have occurred all throughout the world in recent years. In November 2021, 10 people were killed in a crowd disaster at a live music concert in Houston, Texas, U.S. In October 2022, a crowd crush in Itaewon, South Korea killed 159 people at a Halloween festival. In April 2023, nearly 90 people were killed in Sanaa, Yemen, at a charity distribution event. And, in December 2024, 35 people were killed at a religious festival in Nigeria.

These examples are just a small sampling of a type of catastrophe that happens more often than people may think.

## For planners and governments to note

So, why do these injuries and deaths keep happening after so many high-profile disasters? If you believe many of the news stories and commentary that often surround such tragedies, these crushes are the fault of crowds that are "out of control". We are too quick to blame the victims in these scenarios, and too eager to use conventional wisdom, stereotypes, and rules of thumb as substitutes for actual science.

But, the science itself is clear: preventing crowd crush requires keeping crowd densities at safe levels, and the only entities who can do so effectively are the local governments, event organisers, and promoters who plan and oversee these large events. Individual members of crowds themselves have a very limited ability to perceive what is happening to the crowd as a whole, and virtually no ability to control it. Once a crowd reaches a dangerous density, moreover, nobody in the crowd can meaningfully influence what is happening around them. In fact, at that point, the crowd members themselves may not even be able to take a full breath.

Event planners and local governments can take

relatively easy steps to nearly eliminate the risk of crowd crush. They can open more entries and exits. They can stagger arrival times for large events. They can make sure passageways travelled by crowds are free from debris and other obstacles that might compress the crowd into bottlenecks. They can also segment the crowd into groups to prevent a sudden crowd surge. Planners do this each year on New Year's Eve at Times Square in New York City: placing the crowd into segmented areas of roughly 100 people each to prevent the massive crowd from clustering in ways that might create a dangerous crowd density. It is simple, it is relatively inexpensive, and it works.

## On organisers and the economic factor

The problem is that, currently, in most nations, nothing requires promoters, planners, or local governments to do any of this. Worse, event organisers themselves have a vested interest in keeping such laws off the books. Instead, they have a strong economic incentive to pack as many people as possible into events to maximise ticket, food, and merchandise sales.

The tragedy at the Maha Kumbh, however, should inspire governments everywhere to reconsider their hands-off approach to crowd crush and pass sensible laws and regulations requiring event planners, promoters, and venues to take the basic steps needed to reduce the risk to individuals at large events. Even small amounts of planning and minimal changes to a venue can almost eliminate the risk that crowd members will be injured, trampled, or squeezed to death on their feet while still allowing everyone to have a good time. The cost of waiting to make such changes will continue to be measured in human lives.

## GS Paper 03 : Disaster and disaster management

**UPSC Mains Practice Question:** Crowd crush incidents are preventable yet recurrent across the world. Discuss the key causes and suggest measures to ensure better crowd management at large public gatherings. (150 Words /10 marks)

## Context :

- This week, India witnessed a tragic crowd crush at the Maha Kumbh led to the deaths of 30 people.
- Such disasters have become common worldwide at religious gatherings, concerts, and sports events.

## Understanding Crowd Crushes

- Crowd crushes occur when too many people gather in a small space, increasing density beyond safe limits.
- Studies show that at five people per square meter, injuries become likely, and at seven people per square meter, deaths can occur.
- In the Maha Kumbh tragedy, a large crowd behind a barrier led to dangerous compression, resulting in fatalities.

## Similar Tragedies Worldwide

- **November 2021:** 10 people died at a music concert in Houston, Texas, U.S.
- **October 2022:** 159 people lost their lives in a Halloween crowd crush in Itaewon, South Korea.
- **April 2023:** A charity event in Sanaa, Yemen, led to 90 deaths due to overcrowding.
- **December 2024:** A religious festival in Nigeria resulted in 35 fatalities. These events highlight the recurring nature of such disasters across the globe.

## The Role of Governments and Event Planners

- Many blame the victims, assuming crowds act out of control, but science disproves this.
- Individuals in a dense crowd cannot control or perceive the overall situation.
- Once density reaches dangerous levels, people lose the ability to breathe properly.
- Only local governments, event organisers, and promoters can effectively manage crowd density.

## Preventive Measures

- Event planners and authorities can take simple and inexpensive steps to prevent crowd crushes:
  - Increase entry and exit points to allow smooth movement.
  - Stagger arrival times to prevent sudden crowd surges.
  - Keep pathways clear of obstacles that create bottlenecks.
  - Segment crowds into smaller groups to reduce dangerous clustering.
  - Example: In Times Square, New York, authorities create small sections of 100 people to control density during New Year's Eve celebrations.

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## The Economic Factor and the Need for Regulations

- ➔ In most countries, there are no strict laws requiring crowd control measures at events.
- ➔ Event organisers have financial incentives to allow high crowd density to maximize profits from ticket sales, food, and merchandise.
- ➔ Governments should introduce mandatory safety regulations for large events to protect lives.
- ➔ Small changes in planning can greatly reduce risks while still allowing people to enjoy events safely.
- ➔ Delaying action will continue to result in tragic loss of lives in preventable crowd disasters.

## Conclusion

- ➔ Crowd crushes are preventable tragedies that occur due to poor planning and high crowd density.
  - ➔ Governments and event organisers must take responsibility and implement simple, cost-effective safety measures to protect lives.
  - ➔ Enforcing regulations can prevent future disasters and ensure public safety at large gatherings.
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