## **Topics**

SAURABH PANDEY
CSE
ENGLISHMENT OF BRUDANS

- Igla -s
- Delhi waste management
- CODEX
- Flash flood in indonesia
- Cold lava
- Mains







# Target Mains -2024/25

Q "Cold lava is a bigger threat than landslide" Explain

प्रश्न "ठंडा लावा भूस्खलन से भी बड़ा ख़तरा है" स्पष्ट करें

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Kunal Roy. Messy Urbanisation is the biggest challenge for the smart city mission. Discuss (10) (vii) The area chosen for developing such cities could be the habitat of The objective of smart City Mission 10 to animals, which would be displaced. promote cities that provide core infrastructure write anything in this space and give a decent makity of life to Its (iv) Displacement of the poor, the street citizens, a clean and sustainable environ-Vendors and slam den dwellers -ment through application of Smort solutions. ought to happen, with them nowhere -> Affordable Objectives ) to got. connectivity Housing facilities & Digitalization (v) Lack of proper drainage system for the poor will cause flooding and chaking of disposal system Health & Education Efficient Urban Solid waste management Mobility Proper water (ii) water logging would manifest Sustainable & electricity mosquito biriths and cause health Environment e-Governance 4 issues and diseases like Dengue, Malaria, Citizen Participation The Challenges are: Typhoid. 1) Improper planning of the cities has Due to all these reasons, and covered up the coater bodies and messy urbanisation, the Smaret aquifers, also caused forests to be City Mission is being slowed cut down. down and may be on the path (1) Lack of greenery has hed to the of failure. formation of Urban Heat Islands = saurabhpandeyupsc.com

# Army set to receive next batch of shoulder-fired Igla-S air defence systems



#### Dinakar Peri

NEW DELHI

The Army is all set to begin receiving another set of Russian Igla-S very short range air defence systems (VSHORAD) by the end of May or early next month, filling a critical void in its air defence requirements which has been repeatedly delayed.

In another development, multiple sources confirmed that the payments issue between India and Russia that has held up critical payments for defence deals as well as payments has been resolved.

The Igla-S systems were receive the first of two Iscontracted last year under sauraphinance yupsc. Com the fourth tranche of



The Igla-S system.

**Emergency Procurements** (EP) and are being assembled by Adani Defence Systems And Technologies Limited (ADSTL) in India under technology transfer from Rosoboronexport, multiple official sources confirmed.

The Army is also set to

Altitude Long Endurance

Unmanned Aerial Vehicles (UAV) assembled by ADSTL in Hyderabad next month.

Last year, the Army contracted 48 Igla-S launchers, 100 missiles, 48 night sights, and one missile testing station under a ₹260 crore contract and deliveries are set to begin by end of this May, a source said.

The missile will be imported and some parts like sights, launcher, and battery will be assembled/manufactured here by Adani defence, another source in the know said.

A VSHORAD is the soldier's last line of defence against enemy combat aircraft, helicopters and UAVs In the multilayered air defence network.

# Igla -S



- "Igla-S" man-portable air defence missile system is designed to engage all types of visible fixed- and rotary-winged aircraft on head-on and pursuit courses as well as smal-sized air targets like cruise missiles around the clock under thermal and background noise.
- powerful anti-aircraft missile system from Russia
- The Army is all set to begin receiving another set of Russian Igla-S very short range air defence systems (VSHORAD)





## On Delhi's mounting waste crisis

As the national capital, Delhi needs to scale up its processing capacity to manage daily waste. The quantity of waste is expected to increase in the coming years together with the per capita waste generation



#### Pradeep Dadlani Pushkara S.V.

#### The story so far:

he Supreme Court's recent criticism of solid waste management (SWM) in New Delhi highlights a critical issue. The national capital has more than 3,800 tonnes of solid waste remaining untreated. This waste reaches landfills and threatens public health and the environment

#### What is the status of Delhi's SWM

According to the 2011 Census, New Delhi's population was about 1.7 crore, which in 2024 is expected to be around 2.32 crore. Considering an average per capita generation of about 0.6 kg/day per person, the city generates approximately 13,000 tonnes per day (TPD) of waste mughly 1.400 truckloads - which adds up to about 42 lakh tonnes per annum. The city's population is expected to rise to 2.85 crore by 2031, so waste generation could go up to 17,000 TPD.

About 90% of the waste generated in the city is collected by the three municipal corporations: the Municipal Corporation of Delhi (MCD), Delhi Cantonment Board, and the New Delhi Municipal Corporation, Generally, about 50-55% of the waste generated in Indian cities is biodegradable wet waste; 35% is non-biodegradable wet waste; and 10% is an inert component. Accordingly, 7,000 TPD would be wet waste: 4,800 TPD dry waste: and 2,000 TPD inert

#### What about the processing capacity

of SWM in Delhi? New Delhi has waste-processing facilities at Okhla, Bhalswa, Narela, Bawana, Tehkhand, SMA Industrial Area, Nilothi, and Ghazipur. These facilities have a collective design capacity of about 9,200 TPD. This includes composting facilities handling around 900-1 000 TPD and waste-to-energy projects of 8,200 TPD.

However, the MCD is disposing of unprocessed waste of 3,800 TPD in the three designated landfills: Gazinur Bhalswa, and Okhla, These landfills. consisting of unprocessed wet and dry waste, generate methane gases, leachates, and cause landfill fires, adversely affecting the surrounding environment. The accumulation of unprocessed waste in these landfills has led to a staggering 2.58 crore tonnes of legacy waste piling up over 200 acres of land. The MCD initiated biomining to reduce the amount of waste in 2019, but the COVID-19 pandemic halted these efforts. Initially planned to be completed by 2024, this task will take another two to three years.

However, the environmental impact will persist until fresh waste is scientifically processed. With the current accumulation of 3,800 TPD of unprocessed waste, the landfills will only become bigger and taller.

What are the MCD's challenges?

The MCD faces several challenges in tackling waste within the city. One major issue is the lack of waste segregation at source. Many households and commercial establishments don't do this. As a result, unprocessed mixed waste enters landfills. Additionally, waste processing plants need large land parcels, of about 30-40 acres each, which is a challenge in Delhi. This challenge in turn leads to a significant portion of waste being left



Public awareness of proper waste

management practices is also lacking. contributing to littering and improper disposal habits, which divert the MCD's attention towards clearing open points rather than processing wet waste.

Lack of regular waste collection services in certain areas also add to the buildup of waste as well as littering, while illegal dumping in open areas and water bodies increases the pressure on the municipal body, warranting more esources for clean-up.

Finally, a lack of coordination among various stakeholders - including multiple municipal corporations - results in inefficient waste management, further complicating the MCD's efforts to address the city's waste management issues.

What efforts need to be made in order the separate the waste? As the national capital, Delhi needs to scale up its processing capacity to manage daily waste. The quantity of waste is

the total design capacity of the city's

Biodegradable wat waste should be

composted or used to generate biogas. The design capacity of the wet-waste-processing system should be set at 9,000 tonnes. Typically, the capacity of composting facilities is around 500 tonnes per day, which means Delhi will need at least 18 composting or biogas

plants to ensure no biodegradable wet waste reaches landfills. This will demand significant efforts from the MCD: to identify land, set up composting facilities. and operate them. As for the non-biodegradable dry waste: about 2% will be recyclable, and this can be sent to recycling facilities. The remaining 33% won't vet be recyclable.

The non-recyclable dry waste fraction is called refuse-derived fuel (RDF) and consists of plastics, paper, and textile waste. This material has good calorific value and can be used to generate power in waste-to-energy projects.

Although the cost of power generation through waste-to-energy projects tends to be slightly on the higher side, the objective is to scientifically manage waste

partner with its neighbouring States to set up a few of these composting plants. Additionally, the market for organic compost produced from wet waste lies in the neighbouring States of Harvana and

Uttar Pradesh. Delhi city has 272 wards. States like Tamil Nadu and Kerala have set up decentralised Micro-Composting Centres (MCC) of five TPD capacity at the ward level. These MCCs can manage about 20% of the city's wet waste. Bengaluru has also set up ward-level Dry Waste Collection Centres (DWCC) of 2 TPD capacity each. These DWCCs can help manage about 10% of the dry waste.

Delhi's SWM system should integrate decentralised options for both wet and dry waste, backed by large processing facilities to ensure all the waste generated is scientifically processed. The city must also ensure existing processing facilities operate at full capacity, while new facilities are built to ensure no waste goes untreated. Finally, urban local bodies should also learn from best practices from other cities in India and abroad on

expected to increase in the coming years

Can waste processing be waste processing facility should be 18,000 decentralised?

Given the challenges with identifying large land parcels. Delhi will need to

de Dellani works with Sycom Dellani works with Sycom Desirets and Consultants, Delhi, and is a senior SWM expert. Pushkara S.V. works with the Indian Institute for Human Settlements, Bengaluru, and is a



#### THE GIST

In Delhi, considering an average per capita generation of about 0.6 kg/day per person. approximately 13,000 tonne oughly 1,400 truckloads which adds up to about 42 lakh tonnes per annum

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# Delhi waste management



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- The MCD faces several challenges in tackling waste within the city. One major issue is the lack of waste segregation at source.
- Many households and commercial establishments don't do this.
- Delhi's SWM system should integrate decentralised options for both wet and dry waste, backed by large processing facilities to ensure all the waste generated is scientifically processed.





- As the national capital, Delhi needs to scale up its processing capacity to manage daily waste.
- The quantity of waste is expected to increase in the coming years together with the per capita waste generation
- Biodegradable wet waste should be composted or used to generate biogas.
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The non-recyclable dry waste fraction is called refuse-derived fuel (RDF) and consists of plastics, paper, and textile waste.

This material has good calorific value and can be used to generate power in waste-to-energy projects.

Although the cost of power generation through waste-to-energy projects tends to be slightly on the higher side, the objective is to scientifically manage waste and mitigate environmental impacts, particularly those arising from landfill  $\Box$  fires.

## Spices Board, CODEX discuss ETO limits





Growing share: In 2023-24, India's spice exports reached \$4.25 bn or 12% share of the global spice exports. KSL

#### Amiti Sen NEW DELHI

The Spices Board has taken up with CODEX, the international food standards body, the crucial issue of setting limits for ethylene oxide (ETO) usage in spices. This follows the recall of certain branded spices exported by Indian companies to Hong Kong and Singapore on concerns related to ETO (ethylene oxide) contamination.

"India has taken up with the CODEX committee the need for setting up limits for ETO usage as different countries have different limits. CODEX has not prescribed a limit so far. Also, there is no standard for ETO testing. India has also given a proposal for that," an official told businessline.

ETO, a chemical used as a sterilising agent in spices, is considered carcinogenic when used beyond certain limits.

While work to prevent contamination needs to be intensified, India's sample failure in spices is less than 1% of its exports in major markets, the official added.

#### Mandatory order

"The Spices Board has taken steps to ensure the safety and quality of Indian spice exports to Hong Kong and Singapore. The board has made it mandatory to test such consignments destined to

#### saurappaandevusse. Com reached \$4.29 billion, accounting for a 12% share

of the global spice exports.

(The writer is with The Hindu businessline)



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### **CODEX**

- The Codex Alimentarius, or "Food Code" is a collection of standards, guidelines and codes of practice adopted by the Codex Alimentarius Commission.
- The Commission, also known as CAC, is the central part of the Joint FAO/WHO Food Standards Programme and was established by FAO and WHO to protect consumer health and promote fair practices in food trade. It held its first meeting in 1963



- Codex standards ensure that food is safe and can be traded.
- The 188 Codex members have negotiated science based recommendations in all areas related to food safety and quality.
   Codex food safety texts are a reference in WTO trade disputes.
- The reference made to Codex food safety standards in the World Trade Organization's Agreement on Sanitary and Phytosanitary measures (SPS Agreement) means that Codex has far reaching implications for resolving trade disputes.



 Since its foundation in 1963, the Codex system has evolved in an open, transparent and inclusive way to meet emerging challenges.
 International food trade is a 2000 billion dollar a year industry, with billions of tonnes of food produced, marketed and transported

## Indonesian rescuers carry on with complex search mission after flash floods

Agence France-Presse

Along debris-filled rivers and mud-caked roads, rescuers on Wednesday digged with tools and their bare hands through the wreckage after frightening flash floods and volcanic debris deluged areas near one of Indonesia's most active volcanos.

In Sumatra island's Tanah Datar district, hundreds of workers raced to find 35 people still unaccounted for after houses were swept away at the foot of Mount Marapi in the dark of night on Saturday, as the clock ticked on the complex rescue mission.

Soldiers, marines, police and volunteers armed with rubber boats were getting involved in the rescue effort along professional search teams.

"We have been scouring the areas that cannot be reached with cars. The currents in the river are extreme, so the search is quite dangerous," said Ritno Kurniawan, a member of the local rafting

community. "We usually found the bodies along the riverbanks, buried under volcanic material or rocks."

The search - now in its fourth day - has been made more difficult by the prospect of further heavy rains and transport access being cut on several key roads by collapsed bridges or mud that had solidified.

The floods killed at least 58 people across six districts in West Sumatra province, injuring dozens and people to evacuate to tem- others appeared stunned like Ritno remained un-



All together: Indonesian rescue teams move logs as they search for flood victims at Batu Taba Village in Sumatra on Tuesday. AFP

well as calling on K-9 dogs and thermal drones to find bodies.

Provincial search and rescue official Hendri, who goes by one name, said rain, stacks of logs and large volcanic rocks in rivers were hindering the

Rescuers were also worried about another flash flood or cold lava flow known as a lahar, where volcanic material is swept down from a volcano's slopes by heavy rains.

#### Survivors in shock

Survivors were still in shock from the disaster, including some who lost their relatives and friends when large volcanic rocks and muddy waves suddenly crashed into their

neighbourhoods. Some tried to clear their houses of mud and collect forcing more than 3,300 their belongings, while

vear-old mother and three children of his nieces two who were teenagers and one five years old, he said, "The rescuers have sent dogs, bloodhounds, and drones but they still have not been found," he

"I still have hope, but if they are no longer alive. I will accept it. I will let God handle it. This is fate, I can't deny it."

At his mother's home, most of the windows and doors were blown out while large logs piled up against the house, which had been flooded by mud.

The lack of visibility was stopping the multipronged search effort during the night.

That was lowering survival hopes for those missing before a "golden period" of seven days runs out by the weekend.

But volunteer rescuers

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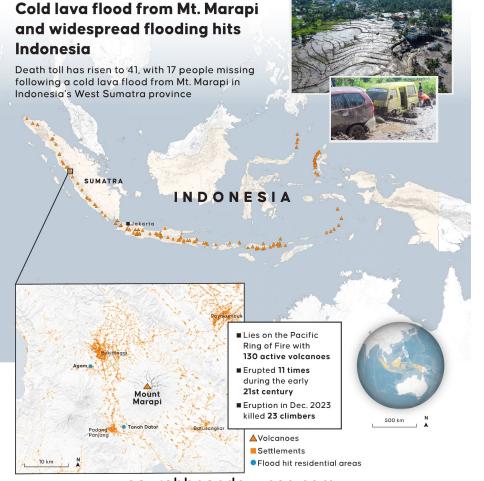
cue effort - using cloud their loved ones.

to heavy machinery and enduring the agonising

technology to aid the res- wait for any news about is our responsibility," he said. "It's a calling from hu-



- Indonesian authorities seeded clouds on , trying to prevent further rain and flash floods after deluges that hit Sumatra Island .
- Monsoon rains triggered a landslide of mud and cold lava from Mount
   Marapi, eventually causing rivers to breach their banks.
- Heavy rains cause frequent landslides and flash floods in Indonesia, an archipelago nation of more than 17,000 islands where millions of people live in mountainous areas or near floodplains.







## What is cold lava?

Cold lava, also known as lahar, is volcanic material like ash, sand and pebbles carried down a volcano's slopes by rain.

Indonesia is prone to <u>landslides and floods</u> during the rainy season.

carried cold lava down from Mount Marapi, the most active volcano in Sumatra

Cold lava, also known as lahar, is a mixture of volcanic material and pebbles that flow down a volcano's slopes in the rain.

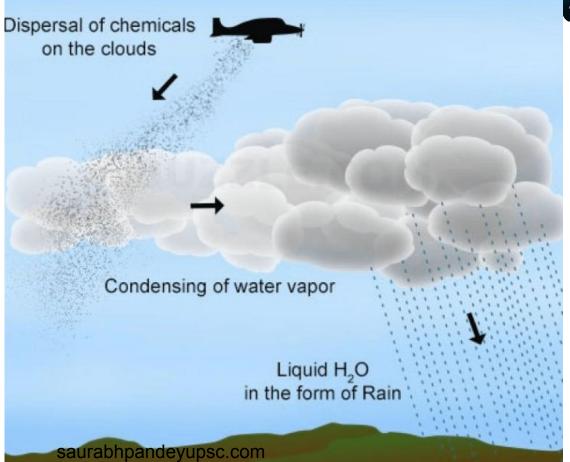


- Cold lava, also known as "lahar" in Javanese, comprises a mixture of water and rock fragments that flows rapidly down the slopes of a volcano, entering river valleys and spreading across wide areas.
- This cold lava can flow at speeds of hundreds of kilometers
   ...





# What is cloud seeding ??



# **Cloud seeding**

Traditional method of rainmaking, in use since the 1940s



1

An aircraft injects silver iodide or other substances into the atmosphere

Silver iodide

The chemicals mimic the particles that serve as surfaces for condensation that creates water droplets

3 Once the condensation creates water droplets that are large appoint by the rain will fall

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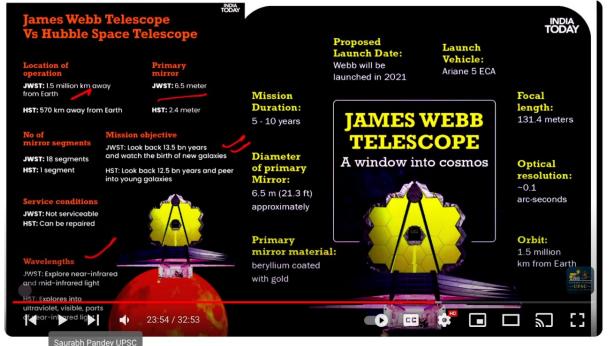












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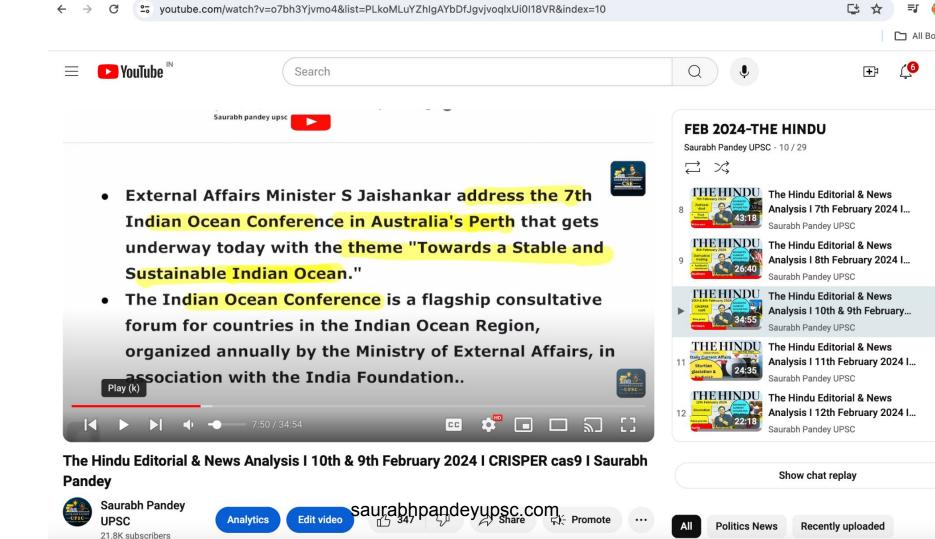


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64.	Which of the following were objectives of the G20 Summit, 2023 under India's Presidency?	61.
	1. Green development	
	2. Accelerating progress on SDGs	
	3. Women-led development	
	Select the correct answer using the code given below.	
65.	A SHIPE FOLL A FIRE IS A ROLL (D)	
	(a) 1 and 2 only	<b>开锅</b>
	(b) 2 and 3 only	
	(c) 1, 2 and 3	
	(d) land 3 only upsc.com	

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MACROECONOMIC RISKS STEMMING FROM CLIMATE CHANGE AND TRANSITION PATHWAYS..... MAINSTREAMING LIFESTYLES FOR SUSTAINABLE DEVELOPMENT (LIFE)

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