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MK Yadav Sir

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TIGER CENSUS

(Syllabus: GS Paper 3 – Env & Eco)

WHY ODISHA WANTS TO HAVE ITS OWN TIGER CENSUS, HOW IT WILL BE DONE

SUJIT BISOYI
BHUBANESWAR, SEPTEMBER 27

AFTER IT announced a tiger census of its own in July, questioning the findings of the All-India Tiger Estimation (AITE) 2022, the Odisha government has unveiled how it plans to carry out the exercise.

The AITE report, released in July, said more than half the tigers Odisha had in 2016 had vanished, with one of its two notified tiger reserves, the Satkosia Tiger Reserve, left with none. It said Odisha had 20 tigers, down from 45 in 2006. The number at the other reserve, the Similipal Tiger Reserve, doubled from 8 in 2018 to 16 in 2022, the report said.

While the AITE since 2006 has replaced the pugmark method with new technologies, Odisha's survey will rely on the camera trap method along with pugmark and other approaches.

What did Odisha claim?

Odisha Forest department officials said the figures depicted in AITE-2022 might not be an accurate reflection of the presence, habitat occupancy and number of tigers in Odisha, as the sampling intensity was relatively low.

They said though the AITE protocol mandates that the survey be carried out in all forest beats and all potential tiger-bearing forest blocks, in Odisha, it was carried out only in limited areas. The state claimed a total of 733 camera traps were deployed in Odisha, as against 6,894 and 4,872 in Madhya Pradesh and Maharashtra respectively.

How will Odisha's survey be done?

The survey aims to arrive at a yearly estimate of tigers through camera-trapping and DNA analysis of scats, and to



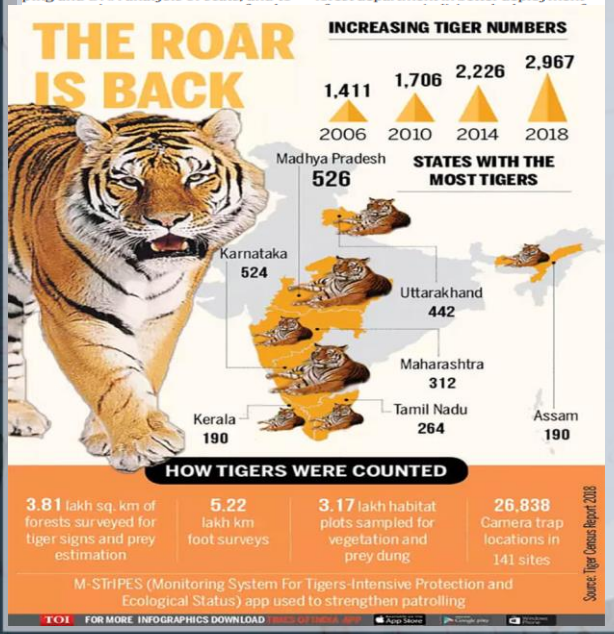
The AITE report in July said more than half the tigers Odisha had in 2016 had vanished. *Archive*

about tigers is collected from various sources, and the areas to be taken up for the 'sign survey' are finalised. The actual survey starts on the field in phase-II, under which information collected from secondary sources is validated on the ground.

During the sign survey, indirect evidence like pugmarks and scats, scratch marks on the trees, rake marks, animal kills and the alarm call by prey animals will be collected along the pre-determined trails inside a census unit. Genetic analysis of the scat samples will also be done for identification of species and sex of the big cats.

After that, phase-III will start, with deployment of camera traps. A minimum of five pairs of camera traps will be deployed in each grid of 25 sq/km for a period of 40 days. In the fourth and final phase, analysis of camera trap images and DNA findings from scats will be done before compilation of numbers.

Dr Lala AK Singh, a retired research officer of the Odisha forest department, said, "The pugmark method will help the forest department in better deployment



Context: After announcing its **own tiger census** in July and raising doubts about the **All-India Tiger Estimation (AITE) 2022**, the **Odisha government** has recently revealed its strategy for conducting the census.

- The **state claimed a total of 733 camera traps** were deployed in Odisha, as against 6,894 and 4,872 in Madhya Pradesh and Maharashtra respectively.

All-India Tiger Estimation (AITE) 2022

- **Nodal Ministry:** Ministry of Environment, Forest and Climate Change (MoEFCC).
- **Maximum Number of Tigers**: Madhya Pradesh (785), followed by Karnataka (563), Uttarakhand (560), and Maharashtra (444).
- **Highest Number of Tigers**: Corbett (260), followed by Bandipur (150), and Nagarhole (141).
- **Increase**: Central India, the Shivalik Hills, and the Gangetic plains
- **Decrease**: Western Ghats

Tiger Census in India

- **About:** It is done **every 4 years** by the National Tiger Conservation Authority (NTCA) in partnership with state forest departments, conservation NGOs, and the Wildlife Institute of India (WII).

Tiger:

- **Conservation status:** IUCN – Endangered, CITES – Appendix I, WPA, 1972 – Schedule I.
- **Characteristics:** It is a solitary animal but mother tiger stay with their cubs for about two years.
  - **Stripes** on every tiger is different as unique as fingerprints of human.
- **Significance of Tigers:** It is a "flagship species of India, umbrella species and also a keystone species".
- **Population in India: 3167** (According to Tiger census, 2022, released April 2023).
- **Conservation programme in India:** Project Tiger, 1973 (Implemented through National Tiger Conservation Authority/NTCA).
- **Conservation programme at global level:** Global Conservation Assured/Tiger Standards (CA/TS), St. Petersburg Declaration (TX2), Global Tiger Forum (GTF), Global Tiger Initiative (GTI).

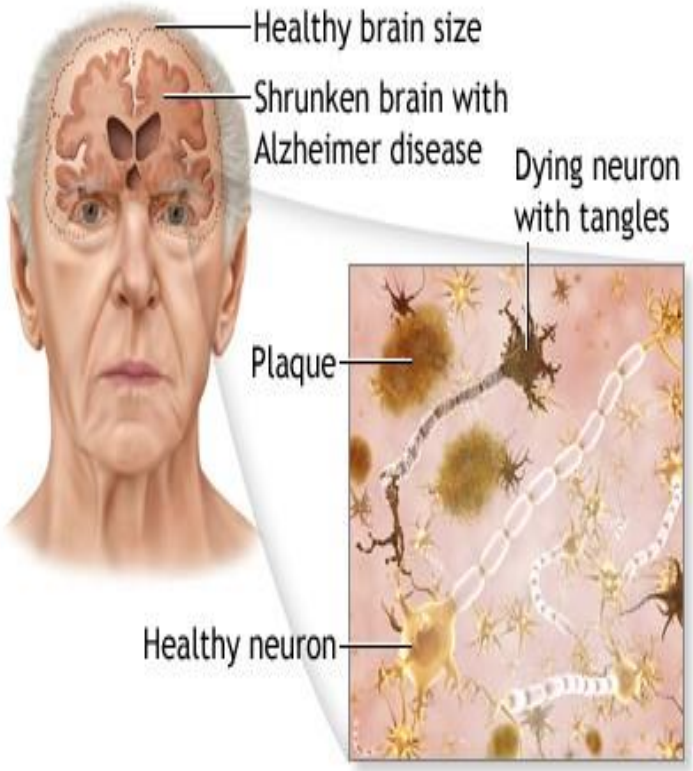
TRIBUNE

Sept 26

ALZHEIMER'S DISEASE

(Syllabus: GS Paper 3 – Sci & Tech (Diseases))

Stem cell therapy shows promise for reducing Alzheimer's symptoms, reveals study



Context: Recently, scientists transplanted **stem cells into mice** and observed a reduction in brain abnormalities characteristic of **Alzheimer's disease.**

Alzheimer's Disease

- **About:** It is a progressive neurologic disorder that causes the brain to shrink (atrophy) and brain cells to die.
- Dementia is a general term for loss of memory, language, problem-solving, and other thinking abilities that are severe enough to interfere with daily life.
- **Impact Areas**: The brain is responsible for cognition, memory, and language.
- It can significantly hinder an individual's capacity to perform routine daily tasks.
- **Vulnerability**: While Alzheimer's disease primarily impacts the elderly, it can also manifest in individuals as young as their 30s or 40s.

Stem Cells Therapy

- Stem cell therapy falls under the umbrella of regenerative medicine, aiming to mend injured cells in the body through the reduction of inflammation and the modulation of the immune system.

Stem Cells

- **About:** These Cells are the foundational cells that can differentiate into specialized cells with distinct functions.
- **Two main categories:** pluripotent stem cells (can differentiate into various adult cells) and adult stem cells (tissue/organ-specific).
- In specific circumstances within the **body or a controlled laboratory setting**, stem cells undergo division, resulting in the generation of additional cells **known as daughter cells**.

PIB Sept 25

PRIP SCHEME

(Syllabus: GS Paper 2 – Government Scheme)

Dr Mansukh Mandaviya launches National Policy on Research and Development and Innovation in Pharma-MedTech Sector in India and Scheme for promotion of Research and Innovation in Pharma MedTech Sector (PRIP)

Context: Recently, the **Union Minister of Chemicals and Fertilizers** and Minister of Health & Family Welfare, Government of India launched the Scheme for **promotion of Research and Innovation in Pharma MedTech Sector (PRIP)**.

PRIP Scheme

- **Launched:** 2023
- **Objective**: To transform the Indian pharmaceuticals sector from cost-based to innovation-based growth by strengthening the research infrastructure in the country.
- **Aim:** To promote industry-academia linkage for R&D in priority areas and to inculcate a culture of quality research and nurture our poSoutheastol of scientists.
- **Time period**: Five years (2023-24 to 2027-28).
- **Components**: Component A - Strengthening the research infrastructure by establishing of 7 Centre of Excellence (CoEs) at NIPERs.
- Component B: Promotion of Research in the Pharma MedTech sector.
- **Ministry**: Ministry of Chemicals and Fertilisers.

National Institutes of Pharmaceutical Education and Research

- **About**: NIPERs are institutes of national importance under the aegis of the Department of Pharmaceutical, Ministry of Chemicals and Fertilizers.
- **Seven Institutes**: Ahmedabad (Gujarat), Hyderabad (Telangana), Hajipur (Bihar), Kolkata (West Bengal), Guwahati (Assam), Mohali (Punjab), and Raebareli (Uttar Pradesh).
- **Objective**: The Institute is conceived to provide leadership in pharmaceutical sciences and related areas not only within the country but also to the countries in SouthEast Asia, South Asia and Africa.

DIAMOND INDUSTRY IN INDIA

(Syllabus: GS Paper 3 – Economy)



Diamond industry grapples with major slump in demand

Ram Sahgal &
Ravi Dutta Mishra
ram.sahgal@livemint.com

MUMBAI/NEW DELHI

India's diamond cutting and polishing trade is facing an unprecedented crisis amid falling demand, prompting trade bodies to ask members to halt the imports of rough stones for two months.

This is the "worst-ever demand crisis," said Anoop Vrajlal Mehta, president of Bharat Diamond Bourse (BDB), India's hub of diamond trading with the rest of the world. This is just the fifth time since the 1970s that trade associations have made such an appeal to members to halt imports.

The country cuts and polishes nine out of 10 of the world's rough diamonds, providing employment to two million Indians. So far this financial year, exports are down 30.27% from a year ago to $7.03 billion, the worst fall in at least five years.

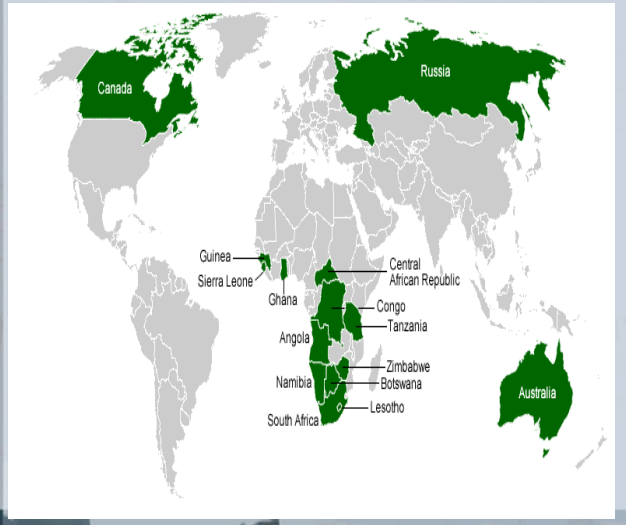
Demand has collapsed in China, which is battling an economic slowdown after a property bubble burst. In the US, another key market, consumers are shunning luxury goods amid high inflation fuelled by an easy monetary policy during the pandemic. China accounts for 13% of polished diamond exports from India and the US 45-48%.

"Polished diamond prices have fallen by 15-20% from a year ago," said Mehta, who is also chairman and managing director of Mohit Diamonds, one of the 38 Indian sightholders of De Beers. Sightholders are companies authorized by De Beers to buy rough diamonds.

What's worrying is that the fall in demand seems to be structural, with prices for natural diamonds (as opposed to lab-

TURN TO PAGE 6

Nine out of 10 of the world's rough diamonds are cut and polished in India. MINT



Context: Recently, the **gems and jewelry industry** urged its members to halt the import of rough diamonds for a two-month period beginning on October 15 due to sluggish global demand and increasing inventories among domestic players.

India's Diamond Industry

- India is the **world's largest cutting and polishing center** for diamonds. It accounts for over 90% of polished diamond manufacturing globally.
- India contributes **19% of the total diamond** exports in the world. (2019).
- Over **75% of the world's** polished diamonds, gems, and jewelry are exported by India.
- The industry contributes **5% to India's GDP** & provides employment to more than 5 million individuals, and it's expected that this figure will rise to 8.23 million by 2022.
- The govt. has permitted **100% FDI** in the sector under the automatic route.

Diamonds

- Diamond is a **rare, naturally occurring mineral** composed entirely of carbon.
- It is the **hardest known** natural substance. It is also chemically resistant and has the highest thermal conductivity of any natural material.
- **Top natural diamond producers**: Russia, Botswana, Canada, Australia, South Africa, and Congo (Zaire).
- **Other important producers**: Namibia, Ivory Coast, Sierra Leone, Venezuela, Brazil, and more.
- The **USA leads** in making synthetic industrial diamonds.
- Russia has the **world's biggest and richest** diamond resources.

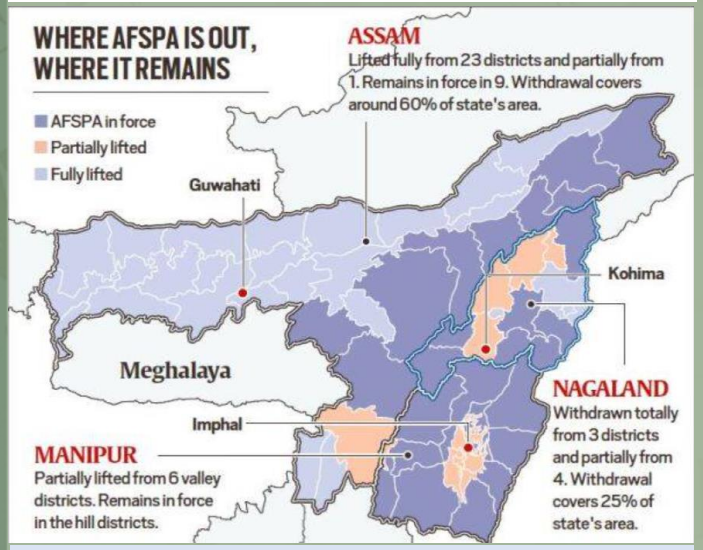
HINDUSTAN TIMES

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AFSPA

(Syllabus: GS Paper 3 – Internal Security)

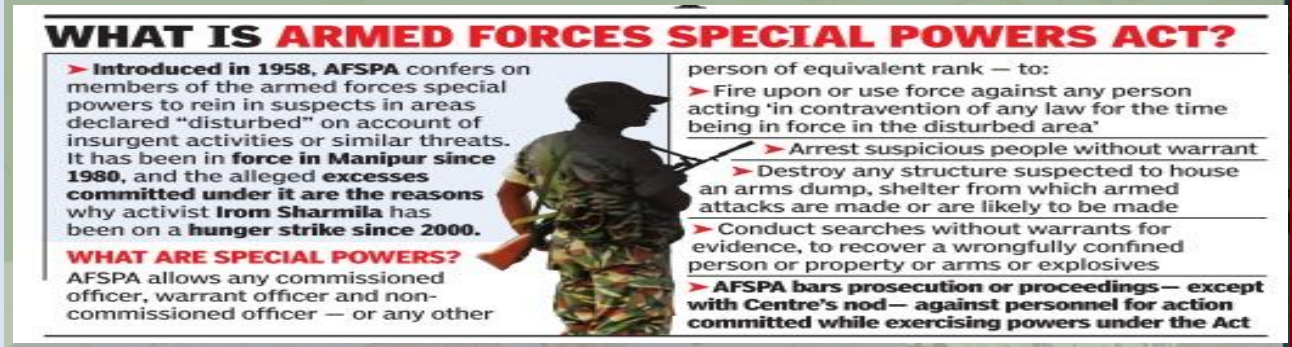
Manipur govt declares entire state 'disturbed area' under AFSPA amid unrest



Context: Recently, the Manipur government declared the entire state a 'disturbed area' under the **Armed Forces Special Powers Act (AFSPA)** for a period of **six months** due to the prevailing law and order situation.

Armed Forces Special Powers Act (AFSPA)

- The **Armed Forces Special Powers Ordinance** of 1942, originally enacted by the British colonial government on 15 August 1942, aimed to suppress the Quit India Movement.
  - After Independence, the **Ordinance was imposed by the Indian government** to deal with the internal security situation that emerged due to the Partition of India.
- **Article 355 of the Constitution of India**: Confers power to the Central Government to protect every state from internal disturbance.
- **Enacted by**: Parliament in 1958.
- **AFSPA declared by**: The Central Government or the Governor of the State or administrator of the Union Territory can declare the whole or part of the State or Union Territory as a disturbed area.
- **Effect in select areas**: Assam, Nagaland, Manipur, and Arunachal Pradesh.



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RoDTEP
(Syllabus: GS Paper 2 – Economy)

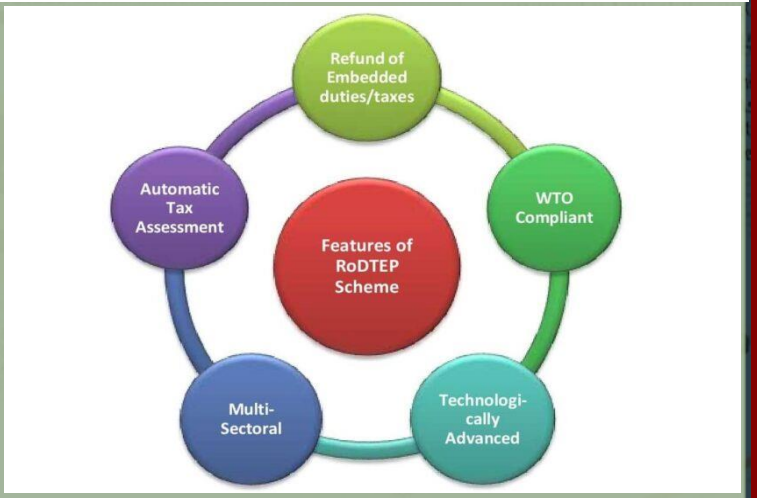
Government extends support under Scheme for Remission of Duties and Taxes on Exported Products (RoDTEP) till 30th June 2024

Context: The Scheme for **Remission of Duties and Taxes on Exported Products (RoDTEP)** support is now being extended till 30 June 2024.

- The RoDTEP **Committee has also been constituted** in the Department of Revenue to recommend the ceiling rates under the RoDTEP Scheme for different export sectors.

Remission of Duties and Taxes on Exported Products (RoDTEP)

- **About:** It is a scheme for Exporters to make Indian products cost-competitive and create a level playing field for them in the Global Market.
- **Implementation:** 1st January 2021
- **Objective:** This is an export duty remission program designed to stimulate the export of goods that had historically shown limited export activity.
- **Replaced**: MEIS (Merchandise Exports from India Scheme)
- The RoDTEP scheme **grants refunds for the previously** unreimbursed Central, State, and local duties/taxes to exporters.
- These refunds are provided in the form of **transferable electronic scrips**, and the entire process is managed by the Central Board of Indirect Taxes & Customs (CBIC) within a comprehensive IT system.





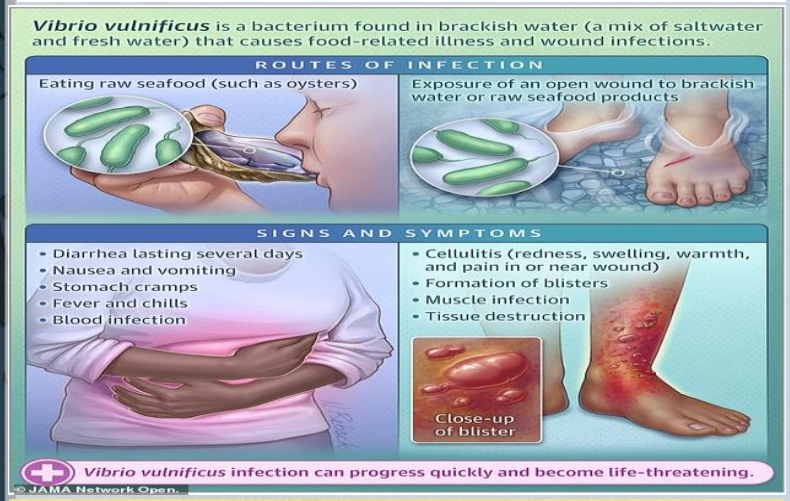
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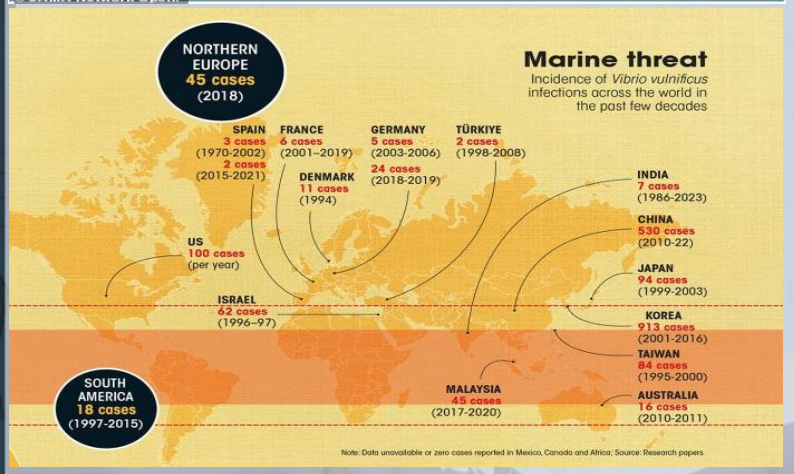
Sept 26

VIBRIO VULNIFICUS

(Syllabus: GS Paper 3 – Sci & Tech (Diseases))

This marine bacterium could become a major threat to coastal populations in the future





Context: According to Researchers, the **number of cases of Vibrio vulnificus** could increase significantly in the coming years.

- In India, the **sea surface temperatures** average 28°C, making the waters conducive to the growth and proliferation of V vulnificus.
- These pathogens thrive in the **tropics or subtropics**, where sea or brackish water temperatures **reach 20°C or higher**. They also prefer waters with low salinity.

Vibrio vulnificus

- **About**: Vibrio vulnificus is a species of Gram-negative, motile, curved rod-shaped (vibrio), pathogenic bacteria of the genus Vibrio.
- **Habitat:** It is present in marine environments such as estuaries, brackish ponds, or coastal areas.
- **Conditions preferred**: Sea or brackish water **temperatures about 20°C** or higher. They also prefer waters with **low salinity**. High rainfall also reduces salt levels in the sea, which suits the bacteria.
- **Transmission**: By eating infected raw shellfish (which results in diarrhea, vomiting, and fever) or by exposing wounds to waters where the bacteria live.
- **Impact**: Infection with V. vulnificus leads to rapidly expanding skin infections by entering a wound causing cellulitis or even sepsis. V. vulnificus is also a source of foodborne illness.
- **Treatment**: Treatment becomes difficult when the bacteria enter the bloodstream. The risk is even higher among people with comorbidities such as chronic liver disease, cancer, chronic kidney disease, and diabetes.

TRAI
(Syllabus: GS Paper 3 – Economy)

MOBILE NUMBER PORTABILITY RULES

Trai Proposes Tweaks to Check SIM-Swap Frauds

Seeks stakeholder comments on draft amendments by Oct 25

Our Bureau

Mumbai: The telecom regulator has suggested changes to the mobile number portability (MNP) rules as it looks to include safeguards against SIM-swap frauds, it said in a circular Wednesday. The Telecom Regulatory of India (Trai) has sought stakeholder comments on the Draft Telecommunication Mobile Number Portability (Ninth Amendment) Regulations, 2023, by October 25.

In addition to the existing cautionary measures the telcos are required to take while porting a number from one network to another, they will now need to check if the request is coming from a number that has undergone SIM swap or replacement in the 10 days prior to the request. If that is the case, then the unique porting code for the request would not be allocated, thus stymying the process of the port-out/in.

"Whether it would be appropriate to introduce an additional criterion for rejection of the request for allocation of Unique Porting Code (UPC) in respect of any mobile connection, which has undergone the process of SIM swap/ replacement/ upgradation? Kindly provide a detailed response with justification," Trai asked stakeholders.

Another amendment requires the donor operator (the network from which the customer is porting out) to send the demographic details of the customer seeking MNP to the porting operator (the network which the customer is porting to). These details are then to be matched by the porting operator to those provided by the customer while porting into its network.

Industry entities have until October 25 to respond to Trai's amendments on the MNP process.

Trai's recommended amendments come after communication to the effect from DoT over the past few months. In a letter dated September 27, 2022, Dot said, "It has come to the notice that mobile connections are being fraudulently ported out by the criminals/ fraudsters by way of fraudulent SIM Swaps/ replacement."

This comes as DoT flagged mobile no.s being fraudulently ported out by criminals/ fraudsters by way of SIM swaps and replacement



Context: The Telecom Regulatory Authority of India (TRAI) recently proposed amendments to mobile number portability (MNP) rules to address SIM-swap frauds.

Telecom Regulatory Authority of India (TRAI)

- **About:** It is a regulatory body set up by the Government of India under section 3 of the Telecom Regulatory Authority of India Act, 1997.
- **Aim**: To regulate telecom services, including fixation/revision of tariffs for telecom services which were earlier vested in the Central Government.
- **Establishment**: In 1997
- **Composition**: Chairperson, two whole-time members and two part-time members, all of which are appointed by the Government of India.
- **Nodal Ministry**: Ministry of Communications and Broadcasting
- **Headquarters**: New Delhi
- **Tenure**: 3 years or till the age of 65 years

Functions of TRAI

- Providing **recommendations on various matters** to the Government.
- Conducting general **administrative and regulatory tasks**.
- **Establishing tariffs** and rates for telecom services.
- Undertaking any **additional responsibilities delegated by the Central Government.**

THE HINDU

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KAIMUR SANCTUARY
(Syllabus: GS Paper 3 – Env & Eco)

Bihar's second tiger reserve to come up in Kaimur sanctuary

Amarnath Tewary
PATNA

Bihar is all set to get its second tiger reserve in Kaimur district by the end of the year or early 2024. The State is home to the Valmiki Tiger Reserve (VTR) in West Champaran district.

Officials of the State Forest Department said they are working on obtaining the National Tiger Conservation Authority's (NTCA) approval for declaring Kaimur Wildlife Sanctuary as a tiger reserve.

"The NTCA had, in principle, approved our proposal in July for the tiger reserve. The department has now started preparing for the final proposal to be sent to the NTCA for its formal approval," according to Additional Principal Chief Conservator of Forest (Wildlife), Prabhat Kumar Gupta.

As per an NTCA report, the tiger population in VTR at present stands at 54 as against 31 in 2018.

Dense forests

Kaimur district primarily comprises two landscapes – the hills, known as Kaimur plateau, and the plains on the west, which are flanked by the rivers Karmanasa and Durgavati. It has a dense forest cover and is home to tigers, leopards and chinkaras.

According to officials, the forests in Kaimur are the biggest in the State, spanning 1,134 sq km and including the 986-sq km Kaimur Wildlife Sanctuary. At 34%, the district also has the highest green cover. The district shares boundaries with Jharkhand, Uttar Pradesh and Madhya Pradesh.

Till 1995, tigers were regularly spotted in the Kaimur hills. After a gap, in 2017 the then District Forest Officer Satyajeet Kumar officially intimated the State government of their reappearance.

An official of the Environment, Forest and Climate Change Department said that in an earlier proposal, "900 km was identified as tiger habitat. But after the NTCA's objection, it has come down to 450 km."

Context: Recently, **Bihar announced** its plans to establish a second tiger reserve in Kaimur district, following **the Valmiki Tiger Reserve**, with an expected completion date by the end of this year or early 2024, while the state's **total tiger population stands at 54.**

Kaimur Sanctuary

- **Location**: Kaimur District of Bihar, near the town of Bhabua.
  - It is the largest sanctuary in the state of Bihar.
- This **Sanctuary is located in the Kaimur Range**. In the valley portions, there are several waterfalls of which the finest
- **Area**: 1,504.96 square kilometers (581.07 square miles)
- **Flora**: Sal, Saja, Mahua, Teak, Bamboo, Semal, and Pakar
- **Fauna**: Bengal tigers, Indian leopards, Indian boars, sloth bears, sambar deers, chitals, and nilgais.

Valmiki Tiger Reserve

- **About**: It is the only tiger reserve in Bihar and forms the easternmost limit of India's Himalayan Terai forests.
- **Location**: Gangetic Plains bio-geographic zone.
- **In 1978**, it was designated as a Wildlife Sanctuary.
- **In 1990**, Valmiki National Park was established.
- The Valmiki Wildlife Sanctuary and National Park is the **country's 18th Tiger Reserve**

DTE

Sept 25

HYBRID SEEDS

(Syllabus: GS Paper 3 – Agriculture)

Hybrid seeds are becoming increasingly popular in India. But that is not good news; here is why

Context: Hybrid seeds are becoming increasingly popular in India.

- The quicker harvest quality of **hybrid seeds gives farmers a window** to sow short-duration crops, such as potatoes, between two crop cycles.

Hybrid Seeds

- They are **produced by controlled cross-pollination** between different varieties of the same plant.
- **F1 hybrid**: It is a **first-generation hybrid**, which means that the seeds came from the cross-pollination of two parent plants from two differen**t "pure" lines**.
  - The origin of hybrids can be **traced to India's Green Revolution** in the 1960s.
- **Nature of hybrid seeds**: They are **quite sensitive** to **temperature and rain**. For instance, a hybrid variety of paddy requires rainfall within 15-20 of sowing.
- **Primary Producer of Hybrid Seeds**: Bihar, Uttar Pradesh, Punjab and Haryana
- Haryana now grows a lot of **hybrid bajra (pearl millet).**
- **Some of the Hybrid seed varieties:** Wheat - Sonalika and Kalyan Sona, Rice - Jaya and Ratna and Cowpea - Pusa Komal.

Hybrid Seeds (Pros and Cons)

- **Pros:** Increased Yield, diseases resistance, improved quality and high nutrition, faster maturity, increased profitability.
- **Cons:** High cost, dependency, limited genetic diversity, ethical concerns, environmental impacts etc.

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