

Contents

GS 1 – HISTORY 4

Remembering Vaikom satyagraha, a 100 years later 4

Near Kutch Harappan graveyard, remains of a skeleton and the key to a puzzle 5

Nehru, Bose, or... Maulana Barkatullah? Who was India's 'first prime minister'? 6

History of Sulthan Bathery 8

GS 1 – ART & CULTURE 9

Matabari Pera, Pachra from Tripura get coveted GI tag 9

GS 1 – GEOGRAPHY..... 9

What is Kallakkadal, which has flooded houses in Kerala's coastal areas? 9

Ring of Fire 10

What are volcanic vortex rings? 13

Above normal rainfall in most parts of country: IMD monsoon forecast..... 14

GS 2 – POLITY..... 16

Free pass to the House: How often MPs, MLAs have been elected unopposed 16

Right against adverse effects of climate change part of rights to life, equality: SC..... 17

How anti-money laundering law came to have a vast scope, granting police powers to ED. 18

Does PMLA's bail concession for women also apply to 'women with agency'?..... 20

Why VVPAT was brought in, why Opposition wants all slips verified..... 20

Why Supreme Court's curative petition relief for Delhi Metro is significant 22

Adjudicating Authority (PMLA)..... 23

How India pulled off its first general election 24

When is a moveable asset 'sizable' enough to declare? It depends, says Supreme Court.... 26

Party symbols in Indian elections..... 27

When Election Commission overcame 'impossible' challenge, held second Lok Sabha election on time 28

The last 72-hour election drill 30

How Nehru won a third term, despite growing challenges..... 32

The story of indelible ink, a lasting symbol of Indian elections, and who makes it..... 34

How climate change is fuelling litigation in India and the world 35

Why High Court upheld Karnataka's ban on hookah..... 36

After wars, deaths, political turmoil, the era of Indira Gandhi 37

Case before Supreme Court: Can Govt redistribute privately owned property? 39

Article 244(A), the constitutional promise of autonomy for Assam tribal area 41

SLU, 'matchbox' that feeds EVM candidate info 42

Full cross-checking, mismatches, return to paper: five arguments SC rejected 44

A long way from 1984: when SC junked ECI's first EVM experiment..... 45

How Indira Gandhi returned to power in 1971 Lok Sabha polls, amid political turmoil and Congress split 46

What Election Commission can do if normal polling process is disrupted..... 48

GS 2 – INTERNATIONAL RELATIONS 51

Katchatheevu and Wadge Bank: the story of two India-Sri Lanka agreements from a half century ago 51

Katchatheevu controversy: Rules of global engagement..... 53

Switzerland's peace bid amid Russia-Ukraine war 55

Iran seizes cargo ship linked to Israel, 17 Indians in crew..... 57

The strategic importance of Andaman and Nicobar Islands	57
GS 3 – ECONOMY.....	59
Viksit Bharat must also be inclusive Bharat	59
India’s trade reliance on China and EU rising: UN trade body.....	61
SEBI launches new version of SCORES	62
India’s fall in fertility rate may be a boon in disguise	62
On road to Viksit Bharat, India should target per capita, not aggregate, GDP	63
Before SC’s 9-judge bench, question of whether states can levy excise duty on industrial alcohol	65
Why green hydrogen presents both major opportunities, significant challenges	67
How a new platform will instantly disburse subsidies to farmers.....	69
Drinks, beverage brands to lose health tag in e-retail	70
Ahead of Musk visit, rules notified for FDI up to 100% in space	71
India’s youth can give the country an edge — if they get the jobs they desire	72
Peru-based top potato research centre to set up India wing.....	73
Health insurance for seniors.....	74
IRDAI abolishes age restriction on health insurance.....	76
AMU gets its first woman V-C: Naima Khatoon	76
EU eases norm to offer Indians multiple entry Schengen visa with longer validity.....	77
No age restriction for health insurance now	78
New shoe sizing system proposed for Indians	79
Engineering in local language? Slow start but uptick in students in UP, Tamil Nadu, Andhra	81
Ethylene Oxide	83
The story of Doordarshan’s iconic logo, now in controversy over its colour	84

Understanding inheritance tax	85
SFBs should be worth Rs 1,000 cr to become universal banks, says RBI.....	87
How the rupee has ‘strengthened’ under Modi government	87
GS 3 – ENVIRONMENT	89
Dual emergence of Cicadas.....	89
Kill elephants, save them: why Botswana wants to gift 20,000 to Germany	90
How invasive species threaten natural ecosystems.....	91
What’s behind heavy rainfall in Dubai	92
Fourth global mass coral bleaching triggered: What are corals and why are they important?	93
Asia worst hit by disasters in 2023, 79 extreme weather events killed over 2,000: WMO report.....	96
How ISRO used satellite remote-sensing to analyse glacial lakes in Himalayas	97
Global treaty on plastic waste	98
Argentine scientists find speedy 90-mn-year-old herbivore dino.....	100
GS 3 – SCIENCE & TECHNOLOGY	100
The push for nuclear energy as climate solution	100
125 years of Kodaikanal Solar Observatory	103
Prostate cancer to spiral in India by 2040, says Lancet	105
New map of universe may open a window to dark energy.....	106
Vaping increases risk of heart failure by 19 per cent, reveals study	107
Diabetes drug slows Parkinson’s progression, clinical trial shows.....	108
India among nations with highest burden of viral hepatitis, says WHO	108
Physicist Peter Higgs passes away: What is the ‘God particle’, which he theorised in 1960s?	110
How and why US wants to establish a time standard for the Moon.....	111

How did star residing in 'Dragon's Egg' nebula get a magnetic field?	112	Army inducts indigenous Akashteer system	126
How viral hepatitis poses a challenge to India's public health.....	114	Gagan Shakti 2024 exercise.....	126
Gopi Thotakura to be the first Indian space tourist: What is space tourism?.....	116	Eye on eastern Ladakh, new Army division likely to be raised this year.....	127
How a beam of sunlight was directed on Lord Ram's forehead in Ayodhya temple.....	116	Indian BrahMos missiles delivered to the Philippines.....	128
Report flags sweetened Nestle products: how added sugar harms babies.....	118	Hangor class submarine	130
How to spot AI-powered political disinformation in poll season.....	119	GS 3 - INTERNAL SECURITY	131
Llama 3, Meta's most sophisticated and capable large language model yet.....	120	Apple warns some Indian users their iPhone may be bugged by Pegasus-type spyware .	131
Microsoft unveils Phi-3-mini, its smallest AI model yet.....	121	Anti-Maoist operations status report.....	132
GS 3 - DISASTER MANAGEMENT.....	122	India 4th largest military spender in 2023: SIPRI.....	133
Why Uttarakhand govt wants to evaluate the risk of Glacial Lake Outburst Floods.....	122	INTERNATIONAL AFFAIRS	134
GS 3 - DEFENCE	124	Russia's 1 st post-Soviet space rocket	134
India's atmanirbhar defence sector	124	On Nepal's Himalayan hillside grows raw material for Japan's bank notes	134
Night launch of 'Agni Prime' missile successful	126	What is Israel's multi-layered air defence system, which helped thwart Iran's attacks?	134
		Indonesia's Mt Ruang erupts	135
		Practice Questions	136

GS 1 – HISTORY

Remembering Vaikom satyagraha, a 100 years later

#VaikomSatyagraha

#TempleEntryMovement #ModernHistory

#History #GS1

Vaikom, a temple town in the princely state of Travancore, saw the start of a non-violent agitation on March 30, 1924 — the first among temple entry movements that would soon sweep across the country. The satyagraha foregrounded social reform amidst the growing nationalist movement, bringing Gandhian methods of protest to the state of Travancore.

Early 20th century Travancore

The princely state of Travancore had a feudal, militaristic, and ruthless system of custom-ridden government.

The second half of the 19th century saw several social and political developments ushering in unprecedented social change. First, Christian missionaries converted large sections of lower castes seeking to escape the clutches of caste oppression. Second, the reign of Maharaja Ayilyam Thirunal Rama Varma (1860-80) saw many progressive reforms, such as universal free primary education — including for the lower castes.

By the dawn of the 20th century, there had begun to emerge among caste Hindus, Christians and even avarna Hindus, especially Ezhavas, a significant educated elite.

While religion and custom remained pervasive, the absolute material and intellectual deprivations of lower castes did not continue. **The Ezhavas, in particular, emerged as the most educated and organised untouchable community in Travancore.**

But government jobs were still reserved for upper castes — in 1918, caste Hindus, a numerical minority, held 3,800 out of 4,000 jobs in the state's revenue department. This meant that education itself did not act as a means of socio-economic advancement.

Also, while a small Ezhava elite had started to emerge, in many cases, the ritual discrimination, overrode material and educational progress. Take for instance the story of Aloomootil Channar, an Ezhava, and one of the few people in Travancore to own a car in the early 20th century. Whenever the automobile reached a road where the Ezhavas were not allowed to pass, Channar had to get out of his vehicle and take a detour on foot.

Road to agitation

The issue of temple entry was first raised by Ezhava leader T K Madhavan in a 1917 editorial in his paper Deshabhimani. Inspired by the success of Gandhi's Non-Cooperation Movement, by 1920, he began to advocate for more direct methods. That year, he himself went beyond the restrictive notice boards on a road near the Vaikom temple.

But upper-caste counter-agitations across Travancore made any progress difficult — and the Maharaja, fearful of caste Hindu backlash, shied away from reforms.

It was the entry of the Indian National Congress into the picture that changed the dynamics. **Madhavan met Gandhi in 1921, and secured the Mahatma's support for a mass agitation to enter temples. In the 1923 session of the INC in Kakinada, a resolution was passed by the Kerala Provincial Congress Committee to take up anti-untouchability as a key issue.** This was followed by a massive public messaging campaign and a movement to open Hindu temples and all public roads to avarnas. Vaikom, with its revered Shiva temple, was chosen as the location for the very first satyagraha.

The Vaikom satyagraha

Madhavan and other leaders took the strategic decision to initially focus on opening up the four roads around the temple — not the temple itself — to avarnas. Early morning on March 30, 1924, a Nair, an Ezhava and a Pulayyu, dressed in Khaddar uniforms and

garlanded, and followed by a crowd of thousands, attempted to use the roads.

They were promptly stopped and arrested. So, the next morning, another three men entered the forbidden roads and courted arrest. This went on every day — until the police stopped making arrests on April 10 and barricaded the whole area instead.

From then through September, protesters sat in front of the barricades, fasting and singing patriotic songs. **Leaders such as Periyar, who was arrested multiple times, and C Rajagopalachari came to Vaikom to offer support and lead the protesters.** At the same time, counter-agitations raged on, and the satyagrahis often faced violence and intimidation from caste Hindus.

In August, 1924, the Maharaja of Travancore died, following which, the young Maharani Regent, Queen Sethulakshmi Bai, released all prisoners. But when a large group of protesters marched to the royal palace in Trivandrum, she refused to allow all castes access to temples.

In March 1925, Gandhi was finally able to iron out a compromise: three out of the four roads surrounding the temples were opened up for everyone, but the fourth (eastern) road was kept reserved for brahmins. This was finally implemented in November 1925, when the government completed diversionary roads that could be used by the low castes “without polluting the temple”. The last satyagrahi was recalled from Vaikom on November 23, 1925.

Legacy and aftermath

The Vaikom satyagraha was a remarkable movement, which sustained itself for over 600 days, amidst hostile social forces, police crackdowns, and one of the worst floods in the town’s history in 1924. The satyagraha also saw previously unseen unity across caste lines, which was crucial for its continuing mobilisation.

But the final compromise disappointed many. Famously, Periyar, who had envisioned a far

more spectacular outcome, fell out with Gandhi over the issue.

In November 1936, the Maharaja of Travancore signed the historic Temple Entry Proclamation which removed the age-old ban on the entry of marginalised castes into the temples of the state. This, along with the demonstration of Gandhian methods of civil disobedience as effective tools of protest, was the great success of the Vaikom satyagraha. As King wrote: “Despite its shortcomings ... the Vykam satyagraha brought untouchability, unapproachability, and unseeability to the forefront of political issues in India.”

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Near Kutch Harappan graveyard, remains of a skeleton and the key to a puzzle

[#HarappaGraveyard](#)

[#PadtaBet](#)

[#JunaKhatiya](#)

[#Harappa](#)

[#IndusValleyCivilisation](#)

[#AncientHistory](#)

[#History #GS1](#)

A human skeleton, degraded and in a flexed posture, found on the slope of a hillock in a Gujarat village could hold the key to a mystery that’s been puzzling a team of archeologists.

In 2018, archeologists from the University of Kerala, working in collaboration with Krantiguru Shyamji Krishna Varma Kachchh University, Bhuj, had unearthed a mass burial site with 500 graves on the outskirts of Khatiya village in Gujarat’s Kutch district. The question then was: whose graves are these? Was this the burial ground — arguably the largest such — for a big human settlement in the vicinity or was it a common facility for a cluster of smaller settlements? Since then, the team has been looking for the remains of settlements in the vicinity.

Now, the presence of the skeleton, along with pottery artefacts and animal bones, that the team of archaeologists excavated from a hillock, locally called Padta Bet, point to the presence of a 5,200-year-old Harappan settlement that was 1.5 km from the mass

GS 1 – ART & CULTURE

Matabari Pera, Pachra from Tripura get coveted GI tag

#MataberiPera #Pachra #GItag
#ArtandCulture #GS1

Two items from Tripura have earned the prestigious Geographical Indication (GI) tag. The two items that received the tag are Matabari Pera – a dairy-based confectionary item traditionally served as prasad at the Tripurasundari temple in Gomati district – and Pachra – a handwoven cloth used by the state’s Indigenous communities.

The Matabari Mahila Cluster Level Bahumukhi Samabaya Samity Limited had applied for the GI tag for Matabari Pera while the Dewanbari Mahila Cluster Bahumukhi Samabaya Samity

Limited had made a similar application for Pachra or Rignai textile in March last year.

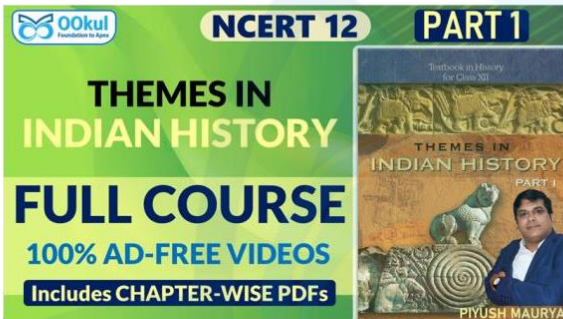
According to the 1921 census, there were 34,356 tribal families in Tripura while the number of loom-looms was 34,485. However, the 1955-56 Industrial Survey Report noted that the total number of weavers was just 15,000.

The GI tag is expected to boost the waning number of traditional weavers and provide an impetus to the rich art form, observed experts.

A year earlier, Tripura’s iconic queen pineapple had received a GI tag among 13 other products from the Northeast.

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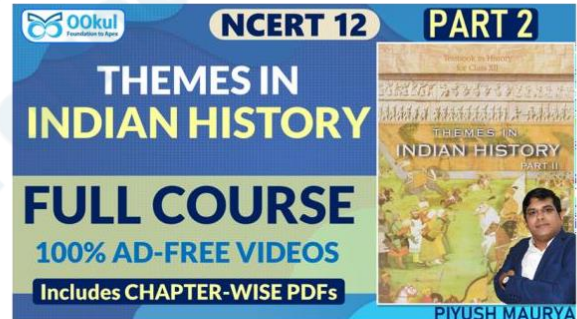
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PDF NOTES



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PDF NOTES

GS 1 – GEOGRAPHY

What is Kallakkadal, which has flooded houses in Kerala’s coastal areas?

#Kallakkadal #SwellSurge #Weather
#Geography #GS1

Hundreds of houses have been flooded in several coastal areas of Kerala due to high sea waves, also known as swell waves.

What is Kallakkadal?

Kallakkadal is essentially coastal flooding during the pre-monsoon (April-May) season by swell waves on the southwest coast of India.

The term Kallakkadal, used by local fishermen, is a combination of two Malayalam words, including Kallan and Kadal. "Kallan means thief and Kadal means sea. In spoken language, these words were combined and pronounced as Kallakkadal, meaning ocean that arrives as a thief," the study said. In 2012, the term was formally approved by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

What causes Kallakkadal?

Kallakkadal is caused by waves that are formed by an ocean swell, hence the name swell surge. Ocean swells occur not due to the local winds, but rather due to distant storms like hurricanes, or even long periods of fierce gale winds. During such storms, huge energy transfer takes place from the air into the water, leading to the formation of very high waves. Such waves can travel thousands of kilometres from the storm centre until they strike shore.

Usually, Kallakkadal is a consequence of the strong winds in the southern part of the Indian Ocean, where an ocean swell is generated, and the waves then travel north to reach the coast in two or three days.

The latest instance took place after a low atmospheric pressure system moved over the region around March 25 from the South Atlantic Ocean — 10,000 kilometres off the Indian coast. The arrival of the pressure system resulted in strong winds, which led to the formation of swell waves of up to 11 metres in height. These waves have been hitting the Kerala coast and Lakshadweep since Sunday (31 March 2024).

Kallakkadal occurs without precursors or any kind of local wind activity and as a result, it has been very difficult for the coastal population to get an advance warning. However, early warning systems like the

Swell Surge Forecast System —launched by the Indian National Centre for Ocean Information Services (INCOIS) in 2020 — gives forewarning seven days in advance.

Why is Kallakkadal different from tsunami?

Kallakkadal came under the spotlight after the 2004 tsunami that killed more than 10,000 people. However, Kallakkadal is often mistaken to be a tsunami, which is a series of enormous waves created by an underwater disturbance usually associated with earthquakes occurring below or near the ocean.

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Ring of Fire

[#Ringoffire](#) [#Earthquake](#) [#Volcanoes](#)
[#TectonicPlates](#) [#SubductionZone](#)
[#Geography](#) [#GS1](#)

Nine people died and more than 800 got injured in Taiwan after the island was hit by its **biggest earthquake in at least 25 years** on Wednesday (April 4) morning. While Taiwan's earthquake monitoring agency said the quake was 7.2 magnitude, the US Geological Survey (USGS) put it at 7.4.



The **epicentre** of the quake was located just **18 kilometres south-southwest of Hualien County, which is situated in eastern Taiwan**. Multiple aftershocks were experienced, and one of them was 6.5 magnitude, according to USGS.



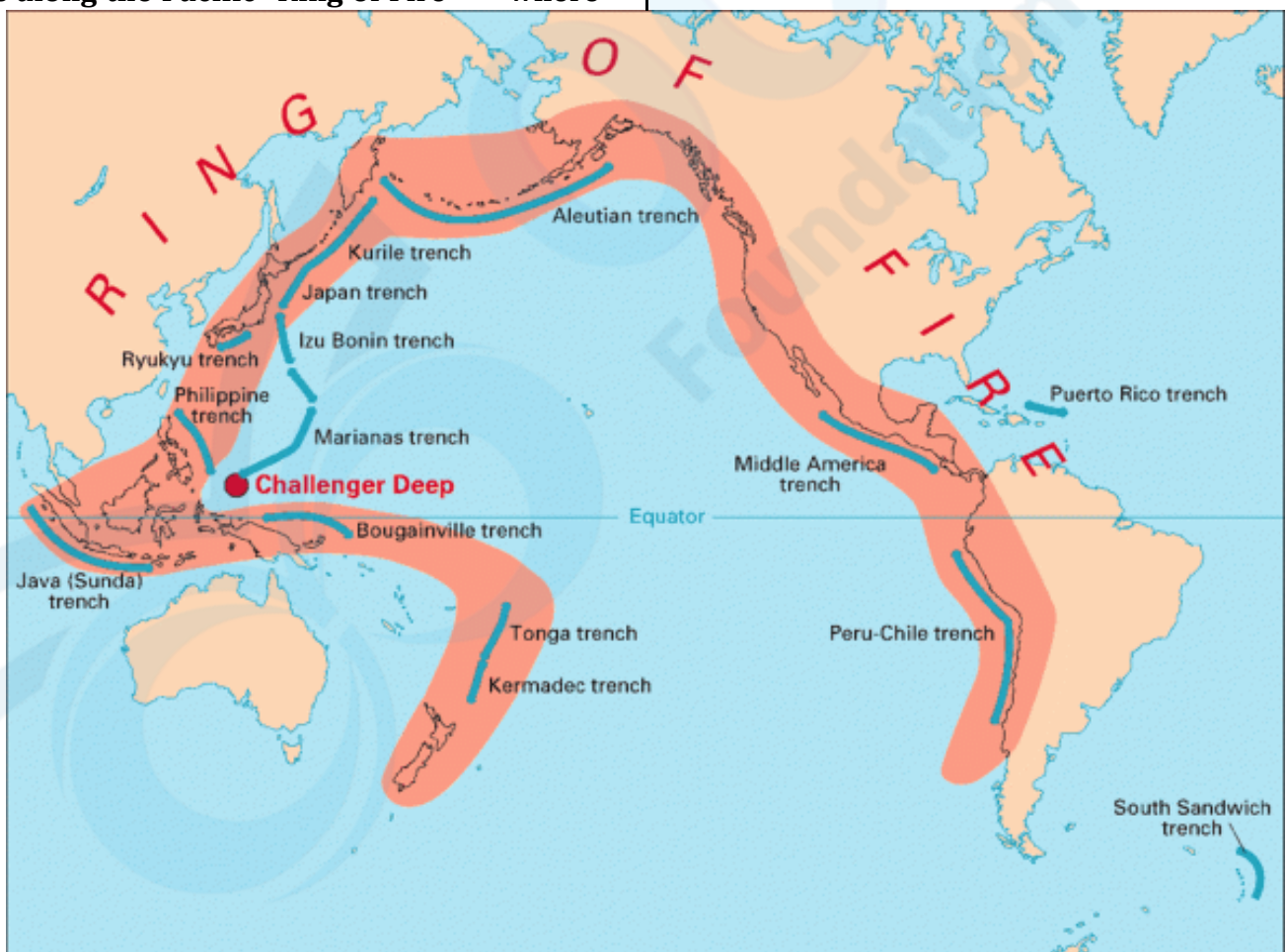
Notably, Taiwan is prone to earthquakes as it lies along the Pacific “Ring of Fire” — where

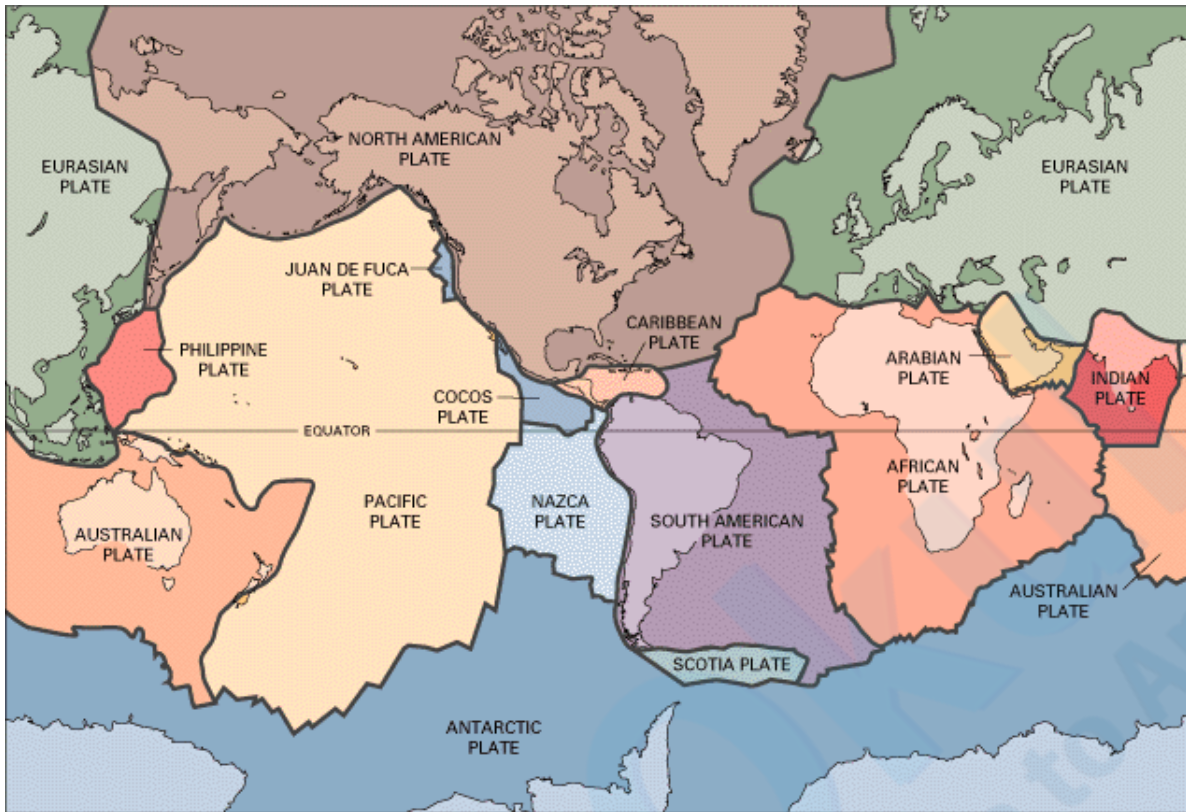
90% of the world’s earthquakes take place. The island and its surrounding waters have registered about 2,000 earthquakes with a magnitude of 4.0 or greater since 1980, and more than 100 earthquakes with a magnitude above 5.5, according to the USGS

What is the Ring of Fire?

The Ring of Fire is essentially a **string of hundreds of volcanoes and earthquake-sites which runs along the Pacific Ocean.** It is a **semicircle or horse shoe in shape and stretches nearly 40,250 kilometres.**

The Ring of Fire traces the **meeting points of numerous tectonic plates, including the Eurasian, North American, Juan de Fuca, Cocos, Caribbean, Nazca, Antarctic, Indian, Australian, Philippine, and other smaller plates, which all encircle the large Pacific Plate.**

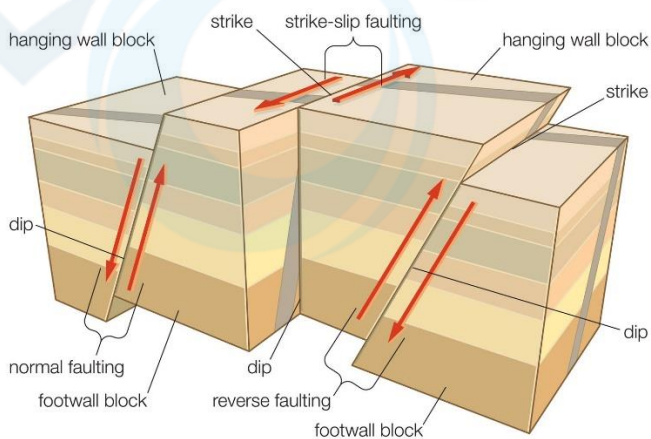




Taiwan experiences earthquakes due to the interactions of two tectonic plates — the **Philippine Sea Plate** and the **Eurasian Plate**.

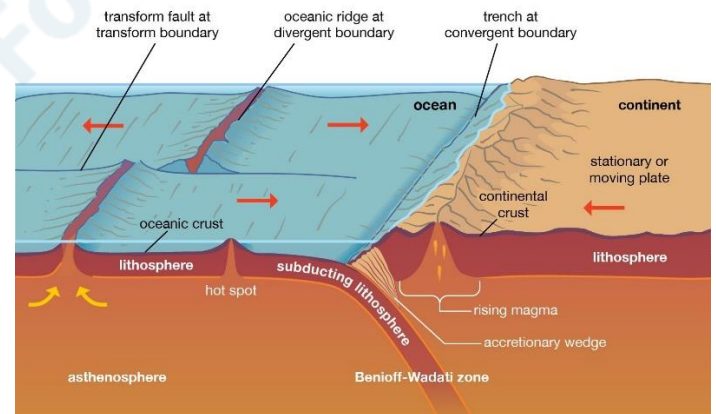
Why is the Ring of Fire vulnerable to earthquakes?

The Ring of Fire witnesses so many earthquakes due to **constant sliding past, colliding into, or moving above or below each other of the tectonic plates**. As the edges of these plates are quite rough, they get stuck with one another while the rest of the plate keeps moving. An earthquake occurs when the plate has moved far enough and the edges unstuck on one of the faults.



Why are there so many volcanoes in the Ring of Fire?

The existence of volcanoes in the Ring of Fire is also due to the **movement of tectonic plates**. Many of the volcanoes have been formed through a process known as **subduction**. It takes place **when two plates collide with each other and the heavier plate is shoved under another, creating a deep trench**.



“Basically, when a ‘downgoing’ oceanic plate [like the Pacific Plate] is shoved into a hotter mantle plate, it heats up, volatile elements mix, and this produces the magma. The magma then rises up through the overlying plate and spurts out at the surface,” which leads to the formation of volcanoes.

Most of the subduction zones on the planet are located in the Ring of Fire and that’s why it hosts a large number of volcanoes.

GS 2 – POLITY

Free pass to the House: How often MPs, MLAs have been elected unopposed

[#UnopposedLegislators](#) [#UnopposedMPs](#)
[#UnopposedMLAs](#) [#LokSabhaElection](#)
[#AssemblyElection](#) [#Election](#) [#Polity](#) [#GS2](#)

Just two weeks after the Election Commission (EC) announced the schedule for the Lok Sabha and four state Assembly polls, **10 BJP candidates for the Arunachal Pradesh Assembly have already won their seats, including Chief Minister Pema Khandu who also won unopposed in 2014 and 2011, the latter in a bypoll. A sixth of the 60-member Arunachal Pradesh Assembly has been elected unopposed, one seat shy of the record set in 2014, when 11 candidates won without an election being required.**

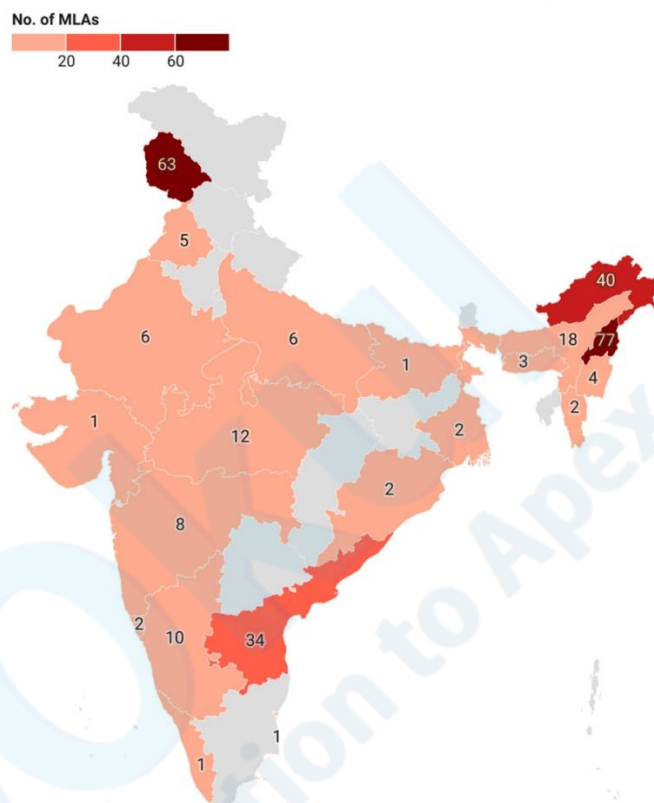
It is more common for MLAs to win unopposed than Lok Sabha MPs. Since the first elections in 1952, 298 MLAs and 28 MPs won their seats in the absence of any opponent.

State Assemblies

In Assemblies, Nagaland leads the way with the most MLAs elected unopposed at 77, followed by Jammu and Kashmir at 63, and Arunachal Pradesh at 40.

In 1962, the Assembly polls in Andhra Pradesh, Madhya Pradesh, Rajasthan, West Bengal, Mysore, and J&K saw the most state legislators elected unopposed in a single year at 47. After that, the highest tallies for a single year came in 1998 at 45, and in 1967 and 1972 at 33 each.

State-wise number of MLAs elected unopposed



Source: Election Commission • Map data: © OSM • Created with Datawrapper

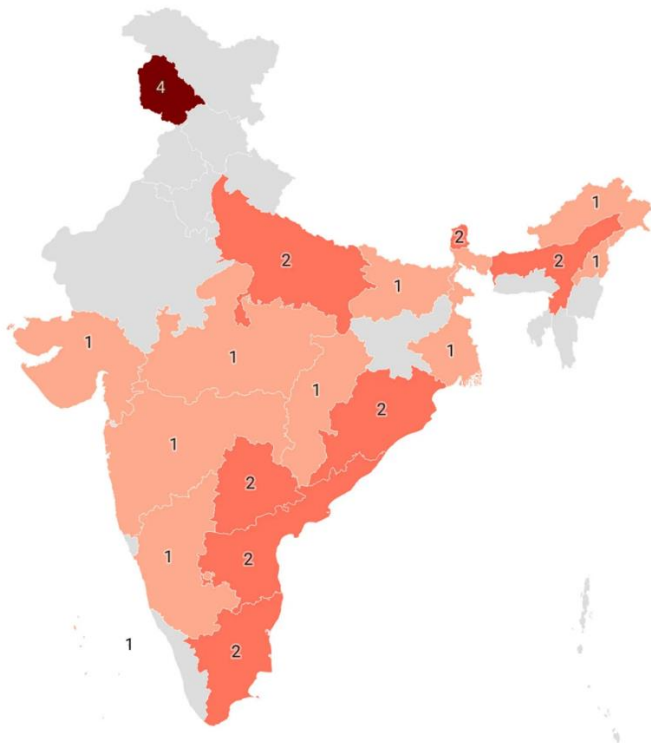
The Congress has, by far, had the most MLAs elected unopposed at 194, followed by the National Conference (NC) at 34, and the BJP at 15. To date, 29 Independents have also been elected unopposed.

Khandu and former J&K CM Syed Mir Qasim have been elected unopposed a record three times each. Khandu's Mukto Assembly seat has seen the most instances of an MLA elected unopposed at five. Before Khandu, his father and former CM Dorjee Khandu won the seat in 1990 and 2009 without a contest.

Lok Sabha

Since 1952, J&K has seen the most MPs elected unopposed at four. Only eight states have sent more than one legislator to Parliament uncontested, including Andhra Pradesh, Assam, Odisha, Tamil Nadu, Telangana, and Uttar Pradesh.

State-wise number of MPs elected unopposed



Source: Election Commission • Map data: © OSM • Created with Datawrapper

The most MPs elected unopposed in a single election came in 1952, 1957, and 1967 at five each. The most recent unopposed election was in a 2012 bypoll, when Dimple Yadav, the wife of Samajwadi Party (SP) president Akhilesh, won Kannauj in Uttar Pradesh. Before that, the last time an MP won uncontested was in 1995.

The Congress has seen the most MPs get elected unopposed at 20. The NC and SP follow with two each. Just one Independent has won the parliamentary election unopposed. There is no BJP candidate on this list.

Only two Lok Sabha seats have seen an MP elected unopposed more than once – Sikkim and Srinagar.

Among the notable MPs who were elected unopposed are former Deputy Prime Minister and Maharashtra CM Y B Chavan from Nasik; former J&K CM and NC chief Farooq Abdullah from Srinagar; former Nagaland CM and ex-Governor of four states S C Jamir; Odisha's first CM Harekrushna Mahatab from Angul; former member of the Constituent Assembly T T Krishnamachari from Tamil Nadu's Tiruchendur; and former Union Ministers P M

Sayed from Lakshadweep and K L Rao from Vijayawada in Andhra Pradesh.

-----N---E---X---T-----

Right against adverse effects of climate change part of rights to life, equality: SC

#RighttoLife

#RighttoEquality

#RightAgainstAdverseEffectsofClimateChange
#Article21 #Article14 #Article48A
#Article51A #Polity #GS2

IN A significant ruling, the Supreme Court has expanded the scope of Articles 14 and 21 to include the “right against the adverse effects of climate change”.

“Article 48A of the Constitution provides that the State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.

Clause (g) of Article 51A stipulates that it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures. Although these are not justiciable provisions of the Constitution, they are indications that the Constitution recognises the importance of the natural world,” a three-judge bench presided by Chief Justice of India D Y Chandrachud has said.

“The importance of the environment, as indicated by these provisions, becomes a right in other parts of the Constitution. Article 21 recognises the right to life and personal liberty while Article 14 indicates that all persons shall have equality before law and the equal protection of laws. These Articles are important sources of the right to a clean environment and the right against the adverse effects of climate change,” it said.

“Despite governmental policy and rules and regulations recognising the adverse effects of climate change and seeking to combat it, there is no single or umbrella legislation in India which relates to climate change and the attendant concerns,” the court noted. “However, this does not mean that the people of

India do not have a right against the adverse effects of climate change,” it added.

On the right to a clean environment, the court said: “**Without a clean environment which is stable and unimpacted by the vagaries of climate change, the right to life is not fully realised. The right to health (which is a part of the right to life under Article 21) is impacted due to factors such as air pollution, shifts in vector-borne diseases, rising temperatures, droughts, shortages in food supplies due to crop failure, storms and flooding. The inability of underserved communities to adapt to climate change or cope with its effects violates the right to life (Article 21) as well as the right to equality (Article 14).**”

The bench was hearing a plea to protect the Great Indian Bustard (GIB) from losing its habitat due to power transmission lines.

-----N---E---X---T-----

How anti-money laundering law came to have a vast scope, granting police powers to ED

[#AntiMoneyLaundering](#) [#PMLA](#) [#ED](#)
[#Section45](#) [#PMLAbail](#) [#IPC](#) [#CrPC](#) [#Polity](#)
[#GS2](#)

In its manifesto — “Nyay Patra” — for the Lok Sabha election released on Friday, the Congress said that if voted to power, it will “put an end to the weaponisation of laws, arbitrary searches, seizures and attachments, arbitrary and indiscriminate arrests”, and promised “to enact a law on bail that will incorporate the principle that ‘bail is the rule, jail is the exception’ in all criminal laws”.

Backed by Supreme Court

On July 27, 2022, a three-judge Bench headed by Justice A M Khanwilkar (now retired) upheld the constitutional validity of PMLA, which was under challenge in a batch of more than 200 individual petitions.

The first challenge was against the alternate criminal law system that the PMLA creates since the ED is kept outside the purview of

the Code of Criminal Procedure (CrPC). The ED is not considered ‘police’, and hence does not follow the provisions of CrPC for searches, seizures, arrests, and attachment of properties. This is significant — since the ED is not a police agency, statements made by an accused to the ED are admissible in court. The judgment in *Vijay Madanlal Choudhary & Ors vs Union of India* upheld these sweeping powers of the ED.

The PMLA, like the UAPA, lays down a stringent standard for granting bail. Section 45 of the PMLA is a ‘negative’ provision — which bars courts from granting bail unless the accused can prove that there is no “prima facie” case against them, and that they will not commit any offence in the future.

In November 2017, in *Nikesh Tarachand Shah v Union of India*, the Supreme Court struck down these provisions as unconstitutional. However, Parliament put them back in by amending the PMLA through the Finance Act, 2018. This was upheld by the 2021 ruling.

While some parts of the 2021 ruling — e.g., the ED is not obligated to disclose the ECIR (akin to an FIR in a criminal case) to the accused — are under review, the ruling is now the law of the land, since there is no stay operating on the judgment itself.

BACKGROUND: With the advent of global terrorism in the 1990s, there was a focus internationally on choking terror financing and the movement of illicit money across borders. The Financial Action Task Force (FATF) was created in 1989 to coordinate anti-money laundering efforts across the world — and as a member, it was incumbent upon India to do its bit.

The PMLA was also enacted in response to the political declaration adopted by the special session of the United Nations General Assembly held on June 8 and 10, 1998, calling on member states to put in place national anti-money laundering legislation.

ENACTMENT: The Prevention of Money-Laundering Bill, 1998 was introduced in Lok Sabha on August 4, 1998, by the Atal Bihari

Vajpayee government. The proposed law was focused on preventing money laundering and connected activities, confiscation of the proceeds of crime, setting up of agencies and mechanisms to coordinate measures to combat money laundering, etc.

As Finance Minister Yashwant Sinha introduced the Bill, parties across the political spectrum opposed what they said were “draconian” provisions. Mulayam Singh Yadav warned that governments could not be trusted with not misusing these provisions. The Congress backed the demand to refer the Bill to a Select Committee of Parliament.

The Bill was referred to the Department-related Standing Committee on Finance, which presented its 12th Report on March 4, 1999, to Lok Sabha. On October 29, 1999, the government introduced The Prevention of Money-Laundering Bill, 1999 in Lok Sabha. **The Bill was passed by Lok Sabha on February 12, 1999, and by Rajya Sabha on July 25, 2002.**

However, the law came into force only in 2005, after Rules were framed by the UPA government.

Two key amendments

Although the law has been changed multiple times over the years, **it was through amendments made in the PMLA in 2009 and 2012 that the ED acquired the powers to take coercive action against politicians.**

In 2009: ‘Criminal conspiracy’ under Section 120B of the Indian Penal Code was added to the PMLA’s schedule among various other offences. This has, over the years, allowed the ED to enter any case where a conspiracy is alleged, even if the principal offence is not part of the PMLA’s schedule.

For example, the ED was able to take over some FIRs related to alleged land-grabbing in Jharkhand because Section 120B IPC had been invoked. This helped ED to build its land-grabbing case against former Jharkhand Chief Minister Hemant Soren. Soren is currently in jail in Ranchi.

In 2009, the ED also got international jurisdiction as far as tracking laundered money was concerned.

In 2012: The PMLA was amended to move the Prevention of Corruption Act, 1988 (PC Act) to Part A of the statute’s schedule from Part B. This was a significant move as it applied stringent bail conditions on those accused of corruption.

Section 45(1) of the PMLA requires that the public prosecutor must be given an opportunity to oppose any application for release on bail. Where the public prosecutor opposes bail, the court must be satisfied that there were reasonable grounds to believe that the accused was not guilty and was unlikely to commit an offence if granted bail.

This section, however, is applicable only to Part A of the statute’s schedule. When Parliament passed PMLA in 2002, Part A only covered offences such as waging war against the nation and trafficking of drugs. But the 2012 amendment expanded Part A to include the PC Act, the Wildlife (Protection) Act, the Immoral Traffic (Prevention) Act, the Antiquities and Arts Treasures Act, the Transplantation of Human Organs Act 1994, the Passports Act, the IT Act, and other laws.

It is because of this amendment that NCP leader Chhagan Bhujbal, who was arrested by the ED in 2016, could not get bail for more than two years. Also, Satyender Jain of AAP has been in jail for almost two years, and former Delhi Deputy Chief Minister Manish Sisodia completed a year in jail in February.

Given that **money laundering offences attract 3-7 years in prison, such long incarcerations before trial are seen by critics as akin to serving a sentence even before conviction.**

The amendments also enlarged the definition of the offence of money laundering to include activities such concealment, acquisition, possession and use of proceeds of crime as criminal activities, and provided that unless there is proof to the contrary, it shall be presumed

that any proceeds of crime detected is involved in money laundering.

This effectively meant that if an individual deposited tainted money in the account of a relative or a family member, or bought a property in their name, they would be culpable even without being aware that the funds were tainted.

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Does PMLA's bail concession for women also apply to 'women with agency'?

#AntiMoneyLaundering #PMLA #ED
#Section45 #PMLAbail #IPC #CrPC #Polity
#GS2

Do the stringent bail provisions in the Prevention of Money Laundering Act (PMLA) contain an exception for women? A Delhi court is set to decide Bharat Rashtra Samithi leader K Kavitha's plea for bail on this ground in the Delhi excise scam case.

What is the bail provision in PMLA?

Section 45 provides for bail on money laundering charges. This provision in the law, like the stringent bail standard in the Unlawful Activities (Prevention) Act, 1967 (UAPA), puts the onus on the accused to prove that there is no prima facie case against them while seeking bail.

Section 45(1) reads: "No person accused of an offence under this Act shall be released on bail or on his own bond unless (i) the Public Prosecutor has been given an opportunity to oppose the application for such release; and (ii) where the Public Prosecutor opposes the application, the Court is satisfied that there are reasonable grounds for believing that he is not guilty of such offence and that he is not likely to commit any offence while on bail."

However, there is a **crucial exception** to the bail standard. "Provided that a person, who is under the age of sixteen years or is a woman or is sick or infirm, may be released on bail, if the Special Court so directs," the law says. This exception is similar to exemptions

under the Indian Penal Code for women and minors.

What is the legal precedent?

In 2023, Delhi High Court granted bail to 49-year-old Preeti Chandra, wife of Sanjay Chandra, who was the Director of M/s Unitech Group, underlining the exception for women.

The ED, like in Kavitha's case, had made an argument that the accused was not a "household lady". However, the HC said that the PMLA or the Constitution does not make a distinction between a household lady, a businesswoman, or a political figure.

"...To argue what kind of woman is entitled to fall within the proviso to section 45(1) PMLA by creating an ad hoc illusory sub-classification of educated women, business women, women belonging to high social strata, within the broader classification of "woman"...is misconceived," the court said.

However, the court added a qualifier that the accused cannot be a "flight risk" or "tamper witnesses" to be eligible for bail. (*Preeti Chandra vs Directorate of Enforcement*, June 14, 2023).

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Why VVPAT was brought in, why Opposition wants all slips verified

#VVPAT #EVM #Elections
#ElectionCommission #Polity #GS2

With the first phase of voting set to take place on April 19, the Supreme Court (SC) last week said that petitions seeking 100% verification of Voter Verified Paper Audit Trail (VVPAT) slips would be taken up soon.

In March 2023, the Association for Democratic Reforms had filed a petition before the apex court saying that to ensure free and fair elections, the tally from Electronic Voting Machines (EVMs) should be cross-verified with the VVPATs. To make sure that this process is carried out as fast as possible, ADR suggested the use of barcodes on VVPAT slips.

GS 2 – INTERNATIONAL RELATIONS

Katchatheevu and Wadge Bank: the story of two India-Sri Lanka agreements from a half century ago

#KatchatheevuIsland #WadgeBank
#ExclusiveEconomicZone #TerritorialIssue
#IndiaSriLankaRelations
#InternationalRelations #GS2

Weeks before voting for the Lok Sabha election in Tamil Nadu, the BJP has reignited the decades-old Katchatheevu issue, accusing the Indira Gandhi government of “callously giving away”, as the Prime Minister said in a post on social media, the island to Sri Lanka.

Did India indeed “cede” Katchatheevu island to Sri Lanka in 1974? What happened two years later, in 1976, when India signed a

second agreement with Sri Lanka? These questions ponder the import of decisions taken a half century ago, weighing the trading of territorial claims for maritime advantages and broad strategic interests off the coast of Kanyakumari.

But first, what is Katchatheevu island?

Katchatheevu is a 285-acre patch in the sea within the maritime boundary line of Sri Lanka, located 33 km off the Indian coast to the northeast of Rameswaram in Tamil Nadu, and southwest of Sri Lanka’s Delft Island. The tiny, barren island which, according to some official reports, was created following a 14th-century volcanic eruption, is 1.6 km in length and just 300 metres wide at its widest point.



The island was under the control of the kingdom of the Ramanad Raja, a zamindari from 1795 to 1803 in Ramanathapuram in the Madras Presidency during British rule. The 120-year-old St Anthony’s Church on the island attracts devotees from India and Sri Lanka for an annual festival.

What happened to the Island in 1974?

India and Sri Lanka had been claiming Katchatheevu since at least 1921, after a survey placed the island within Sri Lanka’s boundaries. This was contested by a British Indian delegation that cited the Ramanad kingdom’s ownership of the island. The dispute could not

be settled, and continued in the years after Independence.

In 1974, when Indira was Prime Minister, the two governments signed — on June 26 in Colombo and June 28 in New Delhi — an agreement by which the island went to Sri Lanka, but Indian fishermen were given “access to Katchatheevu for rest, for drying of nets and for the annual St Anthony’s festival”.

“Indian fishermen and pilgrims will enjoy access to visit Katchatheevu as hitherto, and will not be required by Sri Lanka to obtain travel documents or visas for these purposes,” the agreement said. The

agreement did not specify the fishing rights of Indian fishermen.

According to information obtained by Tamil Nadu BJP chief K Annamalai under The RTI Act, 2005, the DMK government in Tamil Nadu led by M Karunanidhi at the time silently acquiesced to the Centre's decision to sign the agreement. The RTI reply quoted from the minutes of a meeting between then External Affairs Minister Kewal Singh and Karunanidhi at Fort St. George in Chennai a month before the transfer of the island. According to Annamalai, Karunanidhi was "party to this decision", and had only asked if it was possible to "postpone the decision by two years".

Tamil Nadu Assembly records, however, show that Chief Minister Karunanidhi had attempted to move a resolution in the House in 1974 against the Katchatheevu agreement, but the opposition AIADMK had refused to go along.

And what happened in 1976?

In June 1975, Indira Gandhi imposed the Emergency, and Karunanidhi's government was dismissed in January 1976. Thereafter, several letters were exchanged between the foreign secretaries of India and Sri Lanka, and a set of executive orders were issued on the Katchatheevu issue.

The negotiations and the orders essentially settled the maritime boundary between India and Sri Lanka by giving sovereign rights over a maritime patch called 'Wadge Bank' near Kanyakumari to India. The Wadge Bank lies to the south of Kanyakumari, and has been identified by the Fishery Survey of India as a 4,000-sq-mile area bound by 76°.30' E to 78°.00 E longitude and 7°.00 N to 8° 20' N latitude. It is one of the world's richest fishing grounds, and in a much more strategic part of the sea than the island of Katchatheevu. This area near Kanyakumari has been significant for fishermen from Tamil Nadu and Kerala for more than four decades.

An agreement reached between the two countries in March 1976 said "the Wadge Bank...lies within the exclusive economic

zone of India, and India shall have sovereign rights over the area and its resources" and "the fishing vessels of Sri Lanka and persons on board these vessels shall not engage in fishing in the Wadge Bank".

However, "at the request of the Government of Sri Lanka and as a gesture of goodwill", India agreed that Sri Lankan boats licensed by India could fish in the Wadge Bank for three years "from the date of establishment by India of its exclusive economic zone". But no more than six Sri Lankan fishing vessels were allowed, and their catch in the Wadge Bank could not exceed 2,000 tonnes in any year.

The agreement also said that if India "decided to explore the Wadge Bank for petroleum and other mineral resources" during the three-year period, the Sri Lankan boats "shall terminate fishing activity... in these zones with effect from the date of commencement of exploration".

What happened after the 1974 and 1976 agreements?

The focus in the 1970s was on settling competing claims over territorial boundaries, which led to agreements that gave Katchatheevu to Sri Lanka and the resource-rich Wadge Bank to India.

In the 1990s, the Palk Strait to the east of the Wadge Bank saw a proliferation of efficient bottom-trawl fishing trawlers on the Indian side. The Sri Lankan military was battling the Liberation Tigers of Tamil Eelam (LTTE) at the time, and its navy had no major presence in the sea region. Indian fishing boats would routinely enter Sri Lankan waters for fishing during this time.

In 1991, when J Jayalalithaa was in her first term as Chief Minister, the Tamil Nadu Assembly sought the retrieval of Katchatheevu and restoration of traditional fishing rights for Indian Tamil fishermen. But the demand could not be followed up with Sri Lanka due to the civil war in that country.

The situation changed after the war ended in 2009. Even as Indian fishermen continued to enter Sri Lankan waters due to the depletion of marine resources on the Indian side, the Sri Lankan navy began to carry out arrests, and destroyed hundreds of fishing boats for violating the maritime boundary. This provoked a renewed wave of demands from political parties in Tamil Nadu, including the DMK and AIADMK, to retrieve Katchatheevu.

How did Sri Lanka react to the demands from the Indian Tamil parties?

The two countries have signed an international agreement on Katchatheevu, and Sri Lanka has refused to link the status of the island with the Tamil fishermen's issue.

A Sri Lankan Cabinet Minister said that linking the two issues would be "inappropriate and inaccurate because the issue with regards to Indian fishermen is all about the bottom-trawlers they use for fishing outside Indian waters, which is illegal as per international maritime laws".

And how did the matter reach the Supreme Court?

In 2008, Jayalalithaa filed a petition in the Supreme Court claiming Katchatheevu belonged to India, and could not be ceded to another country without a Constitutional amendment. She argued that the 1974 agreement affected the traditional fishing rights and livelihood options of Indian fishermen.

After becoming Chief Minister in 2011, Jayalalithaa moved a resolution in the state Assembly raising the same demand. In 2012, amid increasing incidents of arrests of Indian fishermen in Sri Lankan waters, she again moved the Supreme Court to expedite her petition.

In August 2014, then Attorney General Mukul Rohatgi told the Supreme Court that the matter was closed, and it would require "war" to get the island back. "Katchatheevu went to Sri Lanka by an agreement in 1974. It was ceded and now

acts as a boundary. How can it be taken back today? If you want Katchatheevu back, you will have to go to war to get it back," he said.

The petition remains pending in the Supreme Court.

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Katchatheevu controversy: Rules of global engagement

**#KatchatheevuIssue #InternationalDeal
#InternationalAgreements #Diplomacy
#InternationalRelations #GS2**

After Prime Minister Narendra Modi amplified an RTI reply on Katchatheevu obtained by Tamil Nadu BJP leader K Annamalai by accusing Indira Gandhi's government of "callously giving away" the island to Sri Lanka, External Affairs Minister S Jaishankar reiterated the talking points in the issue — but did not go further.

Asked whether the Indian government intended to "reopen" the 1974 bilateral pact on Katchatheevu, the diplomat-turned-politician said the issue was "sub judice" — referring to a petition filed in the Supreme Court by former Tamil Nadu Chief Minister J Jayalalithaa.

While the **controversy is being viewed as a political brownie-point-scoring exercise by the BJP against the DMK and Congress in Tamil Nadu**, it has sparked disquiet in the strategic community both in New Delhi and Colombo — especially since it has the imprimatur of the Prime Minister himself.

Basis of international pacts

When two governments negotiate an agreement, they work with information and understanding of the issue available at the time. In making the best possible decision, governments also take into account possible future scenarios and projections. States are rational actors, and they carry out clear-eyed cost-benefit analyses before deciding whether any deal is worth doing.

Veteran diplomats and negotiators say that **there is always a compromise, a bit of give-and-take, in the negotiations.** An agreement on what and what not to concede is critical —

expedited. Maritime services such as repair and logistics must be developed for international and Indian shipping.

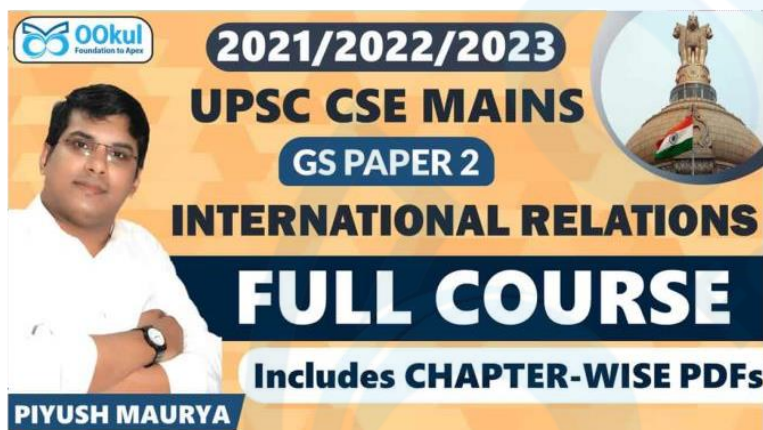
- **Road networks, high-speed inter-island ferry services, and a seaplane terminal must be developed.**
- **The pace of development must be enhanced by sourcing suitable material from abroad, utilising international expertise on creating marine infrastructure, and using components that can withstand the weather and possible seismic shocks.**
- **Forest and environmental clearances must be accorded with minimum red tape.** The concessions for defence

infrastructure allowed along India's northern borders must be extended to the A&N Islands.

- **Planned habitation of uninhabited islands should be considered by providing incentives such as free or subsidised land, where eco-friendly entrepreneurial efforts could be encouraged.**
- **India could also explore the possibility of leveraging international arrangements in the Indo-Pacific such as the Quad and the Indo-Pacific Oceans Initiative (IPOI) to catalyse development efforts on the islands.**

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PDF NOTES

GS 3 – ECONOMY

Viksit Bharat must also be inclusive Bharat

[#ViksitBharat](#) [#IssuesinAgriculture](#)
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The temperatures are rising not only politically, but also atmospherically. It is now confirmed that 2023 was the warmest year on record since 1850 as per the National Oceanic and Atmospheric Administration (NOAA) in the US. The 2023 temperatures were 1.18 degrees Celsius higher than pre-industrial levels, and many scientists are predicting that 2024 could be even worse.

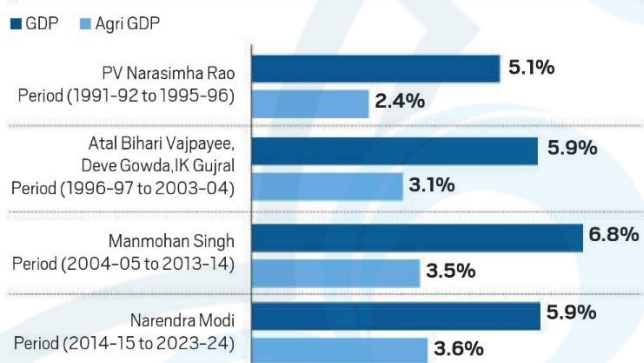
Against this backdrop of rising temperatures, the moot question for us in India is: **Will Indian agriculture be able to feed our growing population in the medium to long run, and whether our farmers will also be prosperous in Viksit Bharat@2047** — an aspirational slogan given by Prime Minister Narendra Modi.

Although 2047 is still 23 years away, and it is very difficult to arrive at such long-term projections, **a rough idea can be obtained by looking at what happened since reforms began in 1991 and continued, in one way or the other, under various governments.** But more interesting would be to see the growth story in the last 10 years under the Narendra

Modi government since 2014 and compare it with the 10 years of the Manmohan Singh government. Given that the incumbent government feels very confident of coming back to office with a thumping majority, it is likely to continue its policies of the last 10 years, or may even accelerate to realise its aspiration of a Viksit Bharat by 2047.

The infographic gives average annual growth rates (AAGR) of overall GDP and agri-GDP (2011-12 base, revised series). **While the long-term growth rate from 1991-92 to 2023-24 (second advance estimate) of overall GDP is 6.1 per cent, for agri-GDP it is 3.3 per cent. However, during the last 10 years of the Modi government, overall GDP has grown only by 5.9 per cent (compared to 6.8 per cent during Manmohan Singh's period) and agriculture growth has been 3.6 per cent (compared to 3.5 per cent during the Manmohan Singh period). There is not much of a difference between the two governments with respect to agri-GDP growth.**

AAGR OF GDP IS 6.1% AND AAGR OF AGRICULTURE IS 3.3% BETWEEN 1991-92 AND 2023-24



Source: MOSPI as accessed on March 28, 2024; AAGR: Average Annual Growth Rate

Agriculture is critical for India's development as it still engages about 45 per cent of the working population (2022-23, PLFS data). So, if Viksit Bharat has to be an inclusive Bharat, it must develop its agriculture to its full potential. Productivity needs to rise, water consumption needs to be reduced, groundwater needs to be recharged, soil degradation needs to be arrested, and greenhouse gas (GHG) emissions from agriculture need to be curtailed. Business as usual, with the current set of policies, is not likely to deliver this dream of inclusive Viksit Bharat by 2047.

What we know today is that **agriculture contributes roughly 18 per cent to the overall GDP but engages 45 per cent of the workforce** — as pointed out earlier. If our growth rates of overall GDP and agri-GDP keep growing as they have during the last 20 years, or even last 10 years, the **likely chances are that by 2047, agriculture's share in overall GDP may drop to just 7-8 per cent but it may still be saddled with more than 30 per cent of the country's workforce. More people need to move out of agriculture to higher productivity jobs with better skills. Therefore, the skill formation of rural people for rapidly growing and urbanising India has to be a top priority.** Else I am afraid, Viksit Bharat will be Viksit only for the top 25 per cent population, while the remaining may remain stuck in the low-medium income category.

The **expected overall GDP growth of 7.6 per cent in 2023-24 is a good foundation to build on.** The Ministry of Finance and RBI both feel upbeat and expect the final numbers of this year may even be higher. It is good news and many in the tribe of economists feel that this can be maintained for the long run. But how many of us have noted that **the agri-GDP growth rate of 2023-24 is a pitifully low 0.7 per cent (second advance estimate)?** Do we want a situation where the economic conditions of the masses improve at less than one per cent while overall GDP grows at 7.6 per cent? The answer is obviously "no".

Remember that agriculture growth dropped to this low level (0.7 per cent) primarily because of unseasonal rains during the last kharif season. And there are no positive signals that the situation will improve. If there are any signals, the risks of extreme weather events are going to increase, as humanity is falling far behind in arresting global warming. Is India in general, and agriculture in particular, ready for that? Not really.

Indian agriculture in Viksit Bharat cannot be on a weak and risky wicket. **Two years of successive droughts can spoil the party of Viksit Bharat. Even without a drought, RBI has been fighting almost this entire year to control food inflation. GoI has put export**

controls, stocking limits on traders, suspended futures trading in many agri-commodities, and unloaded wheat and rice at prices below their economic costs. These are all signs of panic, and policy tools of the 1960s, when India was living from “ship to mouth”. This policy toolbox cannot be carried on in Viksit Bharat.

So, what should be the agenda for agriculture in Viksit Bharat? Rationalise food and fertiliser subsidies, and put the savings to augment agri-R&D, agri-innovations, agri-extension, soil and water recharge through check dams and watersheds, promoting water saving techniques in agriculture (drip and sprinklers, fertigation, protected cultivation, etc). More importantly, Indian agriculture has to move to high-value agriculture (poultry, fishery, dairy, fruits and vegetables) with a value chain approach, from plate to plough, that is, a demand-driven system.

For that, we need to think of policies and institutions through which our farmers can access pan-India markets, and even export markets on a regular basis. Be it through cooperatives or farmer producer organisations (FPOs) on digital commerce (E-NAM, ONDC type) or through contract farming with large processors, retailers, and exporters.

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India's trade reliance on China and EU rising: UN trade body

[#TradeReliance](#) [#IndiaChinaTrade](#)
[#IndiaEUTrade](#) [#InternationalTrade](#)
[#Economy](#) [#GS3](#)

India's trade reliance on China and the European Union is rising as global trade is witnessing a marked shift along geopolitical lines, says a report by the United Nations Conference on Trade and Development (UNCTAD).

This comes in the backdrop of major supply chain reset following the pandemic and the Russia-Ukraine war that had sent food and fuel prices to record highs.

The UNCTAD estimates, based on national statistics, showed that India's dependence on China and the European Union (EU) grew by 1.2 per cent while its reliance on Saudi Arabia slid by 0.6 per cent.

This came despite India's efforts to cut reliance on China by implementing its flagship Production-Linked Incentive (PLI) scheme and Quality Control Orders (QCOs) largely to limit entry of cheap Chinese products.

UNCTAD's estimates showed a major shift in trade due to the ongoing Russia-Ukraine war. While Russia's trade dependence on China surged by a record 7.1 per cent, its reliance on the EU slid by 5.3 per cent.

This was largely a result of Russian oil shifting from the EU to China and India. Chinese custom data showed that China's two-way trade with Russia in 2023 had hit a record \$240 billion. Russia had also increased purchasing Chinese goods when major US and European Union companies began exiting Russia after the war.

Interestingly, the US managed to cut reliance on China by 1.2 per cent in 2023 and increase its trade dependence on the EU and Mexico.

The dependence of an economy on another is calculated as the ratio of their bilateral trade over the total trade of the dependent economy. Change is computed as a four quarter average of this ratio relative to the same period in the previous year, the report said.

The report showed that global trade declined in most sectors, except for pharmaceuticals, transportation equipment, and road vehicles, particularly, electric cars.

Among the sectors where the value of trade declined by more than 10 per cent during 2023 are apparel, chemicals, energy metals, office equipment, and textiles, UNCTAD said.

The report further said that the value of global merchandise trade has experienced continuous decline since mid-2022. Trade in goods expected to contract by about US\$ 1.3

trillion or 5 per cent in 2023. But services trade is expected to gain about \$500 billion, or 8%.

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SEBI launches new version of SCORES

[#SCORES](#) [#SEBI](#) [#FinancialMarket](#) [#Economy](#) [#GS3](#)

Securities and Exchange Board of India launched the new version of the SEBI Complaint Redress System (SCORES 2.0), an online system for investors in the securities market to lodge complaints.

-----N---E---X---T-----

India's fall in fertility rate may be a boon in disguise

[#TotalFertilityRate](#) [#DemographicTransition](#) [#Demography](#) [#Economy](#) [#GS3](#)

The projection by the UN Population Division is that India will have a population of close to 1.7 billion by 2065 before it starts declining. This overwhelming size has overshadowed the debate on other aspects like age structure, quality of the population, and its contribution to economic growth. Now we have a report from The Lancet where the total fertility rate (TFR) for India is projected to go down to 1.29 by 2051. This estimate is based on a complex demographic modelling, done for 204 countries as part of the global burden of disease study. Though this is an estimate within a range of 0.97 to 1.61, given the scientific rigour in their methodology, it opens up interesting pointers to the direction of India's population dynamics.

Several factors have jointly triggered a demographic transition in India, the rapid pace of economic development, particularly since the early years of the present century, being the key one. Lower infant and child mortality rates reducing the need to have a large family for old-age support, would be the other factor, backed by the rise in women's education and work participation rates. Improvement in housing conditions and the old-age security system are the other contributing factors.

The first impact of the rapid decline in TFR is a fall in the dependency rate and a larger share of working adults in the population, leading to an overall surplus income which can accelerate economic growth and lead to positive intergenerational transfers. However, this will subsequently result in a larger share of the elderly dependent population, as is noted in China, Japan and several European countries. The dependency ratio, taking the young and the old as a fraction of the percentage of the working-age population, is projected to go up from 13.8 in 2011 to 23 in 2036 for India.

It must, however, be noted that the decline is uneven across states and it will take a decade before all states, especially large ones like Uttar Pradesh, Bihar and Jharkhand, achieve the replacement level fertility, which, in the long run, would ensure stabilisation of population. Furthermore, the inter-district variations are even higher. Odisha, the state experiencing the fastest transition among the poor states, will achieve TFR as low as 1.51 by 2036 and yet districts like Kandhamal, Nabarangpur and Rayagada will have it much above the replacement level, modelled on the data from NFHS 5.

Undoubtedly, the demographic transition will have a positive impact on several states in the coming years through an increase in labour productivity. It would do so via three channels. First, the decline in population growth would increase the amount of capital resources and infrastructure available in per capita terms. Second, the reduction in fertility would permit the relocation of resources for the education and skill development of children rather than expanding the coverage for achieving universalisation. Third, it would affect the age distribution of the population, increasing the fraction of the labour force in the population, although for a limited period, which would accelerate the growth of the overall economy.

While, in the absence of any recent population count, the future size and structure of the Indian population remain in the realm of projections, emerging population issues have serious

rupee's NEER or its exchange rate with the US dollar.

If one assumes that the rupee was "fairly" valued in 2015-16, when the EER indices were set to 100, any value above 100 signifies overvaluation. The rupee is, to that extent, overvalued today in terms of its REER.

Any increase in REER means that the costs of products being exported from India are rising more than the prices of imports into the country. That translates into a loss of trade competitiveness – which may not be quite a good thing in the long run.

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GS 3 – ENVIRONMENT

Dual emergence of Cicadas

#Cicadas #CicadasEmergence #SpeciesInNews #Environment #GS3

In a rare occurrence, **1 trillion cicadas** from **two different broods** are expected to begin appearing in the Midwest and Southeast regions of the United States at the end of April.

It's the **first time since 1803** that **Brood XIX**, or the **Great Southern Brood**, and **Brood XIII**, or the **Northern Illinois Brood**, will appear together in an event known as a dual emergence.

When are the cicadas coming out?

The first cicadas are expected to start emerging in **late April**. **Temperature determines when they come out**. First the **soil needs to reach 17.78 degree Celsius**, about **6 inches deep**, and then you get a **good soaking rain**, and that's when they really pop.

How long will dual emergence last?

The Midwest and Southwest should be buzzing for about six weeks.

The **cicadas, which live about a month**, will die not far from where they had emerged.

Are cicadas dangerous?

Cicadas don't bite or sting, nor do they carry any diseases. But since they're not great flyers and even worse landers, cicadas often end up on sidewalks and city streets, where they can be squished by people or cars and could conceivably make things slick.

How do you get rid of cicadas?

The short answer is: **You don't**. If you have delicate plants that you want to protect, then use special netting created for the purpose.

The bugs are beneficial to the environment, acting as natural tree gardeners. The holes they leave behind when they emerge from the ground help aerate the soil and allow for rainwater to get underground and nourish tree roots in hot summer months.

The slits they make in trees can cause some branches to break, and the leaves then turn brown in a process known as “flagging,” which is a kind of natural pruning. When the branch grows again, the fruits it yields will tend to be larger. When they die, the cicadas’ rotting bodies provide nutrients that trees need.

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Kill elephants, save them: why Botswana wants to gift 20,000 to Germany

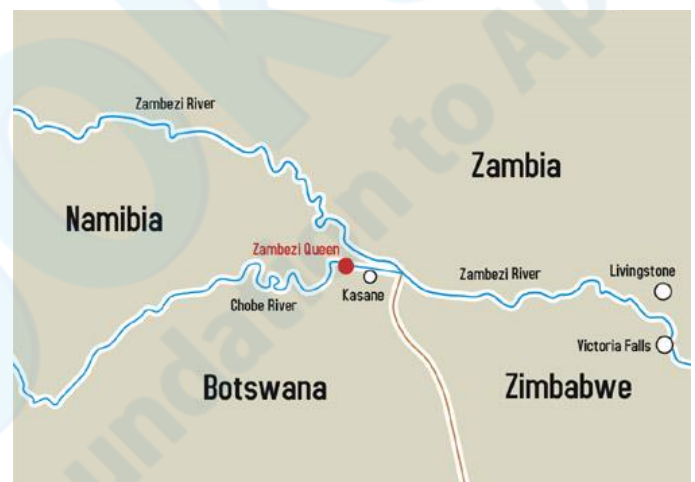
[#TrophyHunting](#) [#Botswana](#) [#Elephants](#)
[#WildlifeConservation](#) [#Environment](#) [#GS3](#)

Botswana has literally an elephantine problem – it has too many elephants. And **President Mokgweetsi Masis** has now said he would like to send 20,000 of the animals to Germany.

Botswana is home to the world’s largest elephant population of 1.3 lakh animals. Hunting has helped keep their numbers in check, and brought revenues from trophy-hunting licences issued to rich westerners. Germany is said to be the largest European importer of African elephant trophies.

Why there are so many elephants in Botswana?

Unlike its south-central African neighbours, Botswana has been a safe haven for elephants due to its stable government and small human population. Following conflict-spurred mass poaching in Namibia and Angola, elephants in Botswana stopped crossing the Chobe river, a tributary of the Zambezi that marks Botswana’s border with Namibia.



Botswana also implemented strict conservation policies, giving shoot-to-kill orders against suspected poachers in 2013. The following year, the country banned licensed trophy hunting – however, **it lifted the ban in 2019.**

And why was hunting allowed again?

Successful conservation resulted in a steady increase in Botswana’s elephant population over the years. In the early 1960s, the country had fewer than 10,000 elephants; by the mid-1990s, the population had reached 80,000.

Today, elephants inhabit about 40% of Botswana’s land, which has led to increased human-animal conflict. Herds often damage homes in rural communities, drink water from pipes, feed on or destroy crops, and trample people and cattle to death.

A large population of elephants also threatens other species and leads to biodiversity loss and habitat degradation –

elephants tear down trees for fodder and consume large amounts of water, which can cause a decline in non-elephant wildlife.

How does elephant hunting help?

Botswana has been donating its elephants – it gave around 8,000 to Angola last year, and 500 to Mozambique in 2022 – but this has not made much of a difference.

Lifting the ban on trophy hunting helps in two ways – it lowers the population, and helps the economy as hunters cough up as much as \$50,000 for each animal they kill.

Trophy hunting brought \$5 million to local communities in Botswana in 2021, according to government figures. Also, trophy hunters injected \$250 million into South Africa's economy yearly and supported 17,000 jobs, according to one estimate in 2018.

It has also been argued that **regulated trophy-hunting ultimately helps the species as governments pump the money into conservation and share profits with local communities, which can prevent habitat loss.**

So what's the problem, then?

Western countries and animal rights advocates deem hunting to be cruel and unethical, and responsible for quickening population decline in imperilled species. Trophy hunters prefer to kill the largest, strongest animals, whose loss causes population declines.

The gains to the economy may be overstated. **In eight key African countries, trophy hunters contribute at most 0.03 per cent of GDP and at most 0.76 per cent of overall tourism jobs.** It is also alleged that **corruption prevents local communities from benefiting from trophy hunting.**

Many experts argue that **outright banning is not necessary.**

If countries want to ban trophy hunting, they need to have an alternative source of revenue worth hundreds of millions of dollars every year. Just banning things without knowing the

consequences is actually creating more problems for the species.

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How invasive species threaten natural ecosystems

[#InvasiveAlienSpecies](#) [#CBD](#) [#WPA1972](#)
[#BiodiversityConservation](#) [#Ecosystem](#)
[#Environment](#) [#GS3](#)

In a bid to manage the teeming population of chital (spotted deer) in Ross Island (officially known as the Netaji Subhash Chandra Bose Island), the Andaman and Nicobar Islands administration recently sought help from the Wildlife Institute of India.

Chital, native to mainland India, were introduced to the tiny island (0.3 sq km small) by the British in the early 20th century. Having no natural predators or competitors, and being good swimmers, chital swiftly spread across the Andamans.

Over the past two decades, studies have examined the seemingly innocuous herbivores' deleterious impact on the islands' native flora and fauna — bringing to spotlight the topic of invasive species, and the threat they pose to endemic ecosystems.

What are invasive alien species?

The Convention on Biological Diversity (CBD) defines invasive alien species (IAS) as “species whose introduction and/or spread outside their natural past or present distribution threatens biological diversity”. These include animals, plants, fungi, and even microorganisms, and can influence all kinds of ecosystems.

The CBD, the United Nations' global treaty on safeguarding biological diversity, sums up characteristics of IAS as follows: “arrive, survive and thrive.” This means that these species need an introduction either through natural or human intervention, survive on native food resources, reproduce at a fast rate, and edge out native species in the competition over resources.

In India, the legal definition of IAS under the Wildlife Protection Act, 1972 (amended in 2022), is narrower. They are defined as “species of animal or plant which is not native to India, and whose introduction or spread may threaten or adversely impact wildlife or its habitat.” Crucially, this leaves out species within India which might be invasive to a particular region — like the chital in Andamans, which are protected in mainland India, but have become a menace in the island chain.

What are some examples of invasive wildlife in India?

The list of invasive wildlife in India is dominated by certain species of fish such as the African catfish, Nile tilapia, red-bellied piranha, and alligator gar, and turtle species such as the red-eared slider.

The red-eared slider, for instance, is a favourite among India’s exotic pet owners, and many have been abandoned in local water bodies. This turtle, native to North America, notoriously edges out local freshwater species, owing to its fast rates of reproduction, and the following competition for food.

With regards to species of fish, many were introduced in India to feed the demand for those maintaining aquariums. For instance, the African catfish was brought over from Bangladesh specifically for aquaculture purposes. “The occurrence of *C gariepinus* (the species’ scientific name) has been reported from several inland system of India including the mighty rivers like Ganga, Yamuna, Sutlej, Godavari, Periyar River and the lakes like Vembanad Lake,” a 2019 study by the National Biodiversity Authority stated.

How do IAS impact native flora and fauna?

Invasive species act as disruptors in the food chain and disturb the balance of the ecosystem. In habitats where there is no competition, invasive species can dominate the entire ecosystem.

For instance, in Keoladeo Park, Bharatpur in Rajasthan, which is a UNESCO World Heritage site, the African catfish has been known to prey on water fowls and migratory birds as well.

Studies have shown that the proliferation of chital in the Andamans has affected the regeneration of native vegetation, as the deer are known to consume seeds and seedlings.

What are IAS’ economic impact?

In September 2023, the UN-founded Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) brought out an exhaustive report on invasive species. The report showed that around 37,000 established alien species were introduced worldwide, with roughly 200 new alien species introduced each year.

Along with causing dramatic changes to biodiversity and ecosystems, the global economic cost of IAS was over \$423 billion annually in 2019. These costs arise out of the damage IAS inflict on an area’s natural ecosystem

For example, as per India’s National Biodiversity Action Plan of 2019, published by the National Biodiversity Authority, the cotton mealy bug (*Phenacoccus solenopsis*) is an invasive species native to North America, which has severely affected cotton crops in the Deccan, leading to yield losses.

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What’s behind heavy rainfall in Dubai

[#DubaiRainfall](#)

[#ClimateChange](#)

[#CloudSeeding](#) [#Environment](#) [#GS3](#)

The United Arab Emirates (UAE) recorded the heaviest rain ever after a severe thunderstorm hit the country on Monday (April 15) late night, killing at least one person, causing damage to homes and businesses, and bringing air travel to a standstill in Dubai.

The rain was “a historic weather event” that surpassed “anything documented since the

Argentine scientists find speedy 90-mn-year-old herbivore dino

#ChakisaurusNekul #DinosaurSpecies
#SpeciesInNews #Environment #GS3

Paleontologists from Argentina announced the discovery of a new medium-sized herbivorous dinosaur, which was a fast runner and lived about 90 million years ago in the Late Cretaceous period in present day Patagonia.

The animal, named **Chakisaurus Nekul**, was found in the **Pueblo Blanco Natural Reserve**, in the fossil-rich southern province of **Rio Negro**, where many mammal, turtle, and fish fossils have been found along with other species of dinosaur.

It is estimated that the estimated Chakisaurus reached 2.5-3 m long, and was 70 cm high.

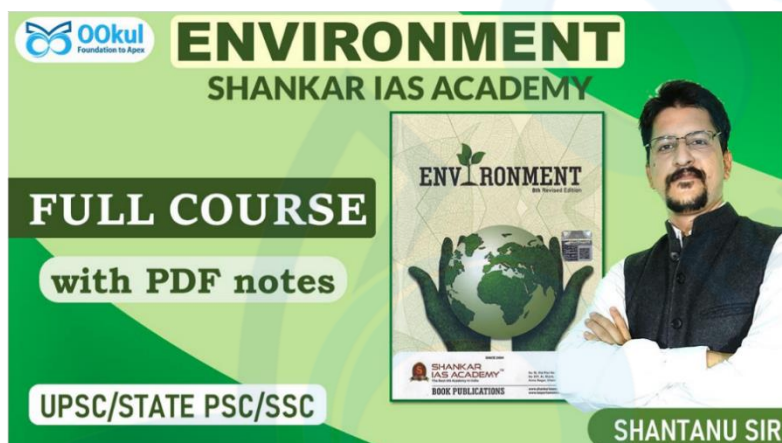
Studies of the dinosaur have indicated that it was a fast runner, and had its tail curved unusually downward.

The dinosaur's name is a derivative of Chaki, from the Aonikenk language of the indigenous Teuelche people, meaning "old guanaco" - guanaco is a medium-sized herbivore mammal found in the region. Nekul means "fast" in the Mapudungun language, of the local Mapuche people.

A team of Argentine paleontologists made the discovery in 2018, but recently unveiled their finding in the respected journal Cretaceous Research.

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GS 3 – SCIENCE & TECHNOLOGY

The push for nuclear energy as climate solution

#NuclearEnergy #NuclearEnergySummit
#IAEA #NuclearElectricityGeneration
#Decarbonisation #ClimateChange
#ScienceandTechnology #GS3

Last week, **Brussels hosted a first-of-its-kind Nuclear Energy Summit** that was billed as the most high-profile international meeting on nuclear energy ever, boasting the attendance of representatives from 30 countries, including a few heads of state. This day-long meeting on March 21 was the latest in a series of efforts

being made in the last few years to pitch nuclear energy as an important solution to global problems like climate change and energy security.

The **International Atomic Energy Agency (IAEA)**, which organised last week's event, called it a "landmark" and a "turning point" in the efforts to expand the use of nuclear energy for generating clean electricity.

Global nuclear advocates, led by the IAEA, an intergovernmental organisation that works for the safe and peaceful use of nuclear science and technology, have been very active in the last few

years in highlighting the potential of nuclear power to accelerate the clean energy transition that the world so desperately needs to achieve its climate change goals.

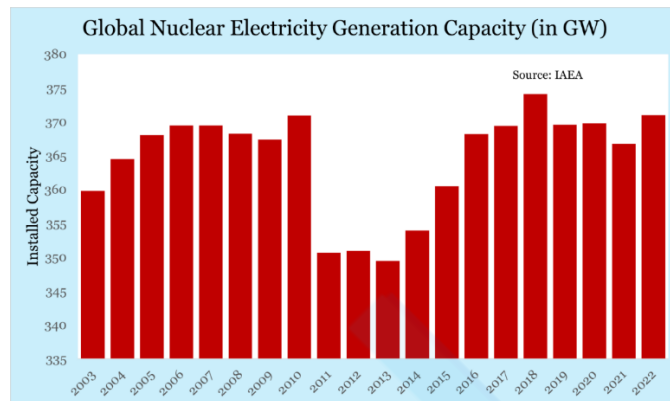
The IAEA has launched an 'Atoms4Climate' initiative to talk about this and has begun an engagement with the climate community, especially at the COPs or the annual year-ending climate conferences. Two years ago, at COP27 in Sharm el-Sheikh, IAEA set up a pavilion for the first time, and at COP28 in Dubai last year, about 20 countries pledged to work towards tripling global nuclear energy installed capacity by 2050.

The case for nuclear energy

The case for nuclear energy as a possible substitute for fossil fuels, at least for electricity generation, is not without merits. It is a clean source of energy with a minimal carbon footprint. There is negligible release of emissions during the electricity generation process.

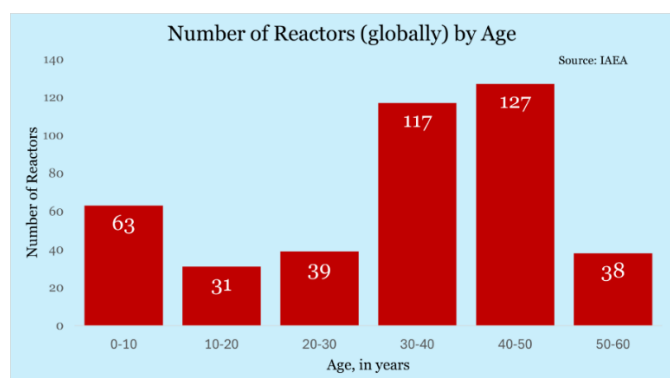
Even when the entire life cycle is considered – accounting for activities like reactor construction, uranium mining and enrichment, waste disposal and storage, and other processes – greenhouse gas emissions are only in the range of 5 to 6 grams per kilowatt hour, according to IAEA. This is more than 100 times lower than coal-fired electricity, and about half the average of solar and wind generation.

Some independent studies have put the emission from nuclear life cycles at much higher levels, around 50-60 grams per kilowatt-hour in some instances, depending on the processes and energy used for extraction of minerals, construction and other activities. But in most cases, nuclear power plants are known to have substantially lower carbon footprint than solar or wind projects over their entire life cycle.



The other great advantage of nuclear is its perennial availability, unlike wind or solar which are season or time-dependent. It is thus suitable for baseload electricity generation that solar or wind projects are unable to do unless breakthroughs in battery storage technologies come along.

For these reasons, nuclear energy features prominently in most of the decarbonisation pathways suggested by the IPCC (Intergovernmental Panel on Climate Change) and others. IAEA says nuclear energy is already contributing very significantly to reducing greenhouse gas emissions. Nuclear power generation results in avoiding emissions of more than 1 billion tonnes of CO2 equivalent every year, according to IAEA. In the last five decades, this has resulted in a cumulative avoidance of about 70 billion tonnes of CO2 equivalent.



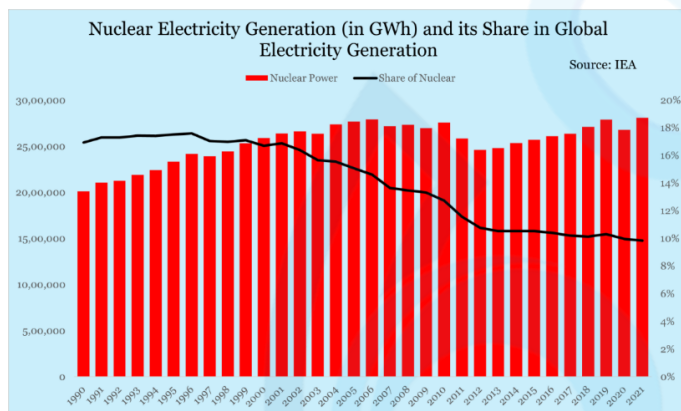
What explains the poor uptake of nuclear energy?

But despite these advantages, there has been a serious lack of enthusiasm for the accelerated deployment of nuclear energy. Only 31 countries in the world use nuclear energy for generating electricity. And barely seven more are working towards joining this club.

The **number of operational nuclear reactors has actually come down in the last 20 years, from 437 in 2003 to 411 now, IAEA data shows.** The average life of these reactors is more than 31 years, which highlights the fact that few new reactors have come onboard in the last decade.

The **total installed electricity generation capacity has shown only a marginal increase during this period, from about 360 GW in 2003 to 371 GW now. Nuclear energy accounts for less than 10 per cent of global commercial electricity generation, and its share has been declining for almost three decades now.**

Safety concerns are not the only reason for the poor uptake of nuclear energy in recent years, though those would be some of the most important, particularly after the Fukushima accident. **Nuclear power also happens to be the costliest electricity right now.**



Nuclear reactors require high investments and technology base, take years to build, and have to operate under a variety of regulations and constraints, making them unattractive for countries wanting to quickly ramp up their electricity generation in an affordable manner.

The kind of technology breakthroughs that have driven down the costs of solar and wind in the last decade, thus enabling rapid adoption, have not happened in the nuclear sector. The much-discussed technology of small modular reactors is far from being mature.

It is hurdles like these that have worked against a rapid growth in nuclear energy in the last three decades. But the climate emergency is creating

an opportunity for a greater push for nuclear energy.

As IAEA director general Rafael Mariano Grossi said **there was a growing realisation that without nuclear “you would never get anywhere near the climate goals. Nowhere near”.**

COP outreach

Die-hard climate activists who have been demanding deep and rapid cuts in production and consumption of fossil fuels aren't really great supporters of nuclear energy. The annual climate conferences have usually maintained a safe distance from the nuclear industry and its advocates. But that is changing.

In the last five years, nuclear energy has progressively gained visibility at these conferences. IAEA has now begun participating in these like any other international agency with observer kind of status, organising side events and talks on the potential of nuclear energy.

The Dubai meeting last year was particularly eventful. Representatives from 22 countries, including several that do not currently use nuclear-generated electricity, committed themselves to working together to achieve a tripling of global nuclear energy installed capacity by 2050 from 2020 levels. This is an extremely ambitious goal, though broadly in line with some pathways projected by the IPCC for achieving global net-zero emission levels by 2050.

Even more significant was the fact that the final outcome from Dubai formally acknowledged nuclear energy as one of the zero, or low-emission technologies, that needed to be accelerated to achieve rapid and deep decarbonisation. This was the first time that nuclear energy was mentioned in any COP outcome.

According to IAEA projections, before the tripling declaration, the total electricity generating capacity of nuclear power was set to grow by 22 per cent by 2030 and 100 per cent by 2050 from 2020 levels. Tripling appears to be a herculean task right now.

What is India's position on nuclear energy?

India, which currently has 23 operational nuclear reactors, does acknowledge the role of nuclear energy in its decarbonisation plan and is planning for a rapid expansion in the coming years, even though the share of nuclear energy in electricity generation is likely to remain extremely modest in the foreseeable future.

The currently operational reactors have a combined installed electricity generating capacity of 7,480 MW (about 7.5 GW). At least ten more reactors are under construction, and the capacity is supposed to triple to 22,480 MW by 2031-32. The share of nuclear energy in total electricity generation capacity is just about 3.1 per cent, among the lowest in countries that do use nuclear energy.

Only Brazil and Iran have a lower share of nuclear energy in their electricity generation mix. Even after expansion, this share is not expected to go beyond 5 per cent.

Interestingly, India skipped the tripling declaration at COP28 in Dubai. It was not the only nuclear power-producing country to do so, several others also did not sign up. But India was very much part of the Brussels meeting last week, with Department of Atomic Energy Secretary Ajit Kumar Mohanty in attendance. Mohanty said that India was firmly of the view that "nuclear power is a clean and environment-friendly source of electricity, which is available 24x7, and can provide the country long-term energy security in a sustainable manner."

Mohanty talked about India's ongoing efforts to triple its current nuclear power capacity by 2030, and said that the aim was for nuclear energy to have a "significant share in electricity mix of India by the year 2047". He did not offer a target for 2047.

Former head of the Department of Atomic Energy Anil Kakodkar believes that India wasn't moving fast enough to expand its nuclear power sector. Kakodkar expressed surprise at India staying away from the tripling declaration at

COP28 and said India had the potential, and also the imperative, to grow its nuclear energy sector at a much faster pace.

"There is a perception that renewables will solve everything. In the short-term, that might be the case. But as our hunger for clean energy increases, the demand cannot be met without getting in nuclear energy in a big way. Every projection shows that," Kakodkar had said.

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125 years of Kodaikanal Solar Observatory

[#KodaikanalSolarObservatory](#)

[#SolarObservatory](#)

[#SolarObservation](#)

[#ScienceandTechnology](#) [#GS3](#)

Since ancient times, seafarers, mathematicians, astronomers and physicists have all extensively studied and followed the Sun and its activities. In 1792, the British East India Company established the Madras Observatory, a first of its kind in this part of the world.

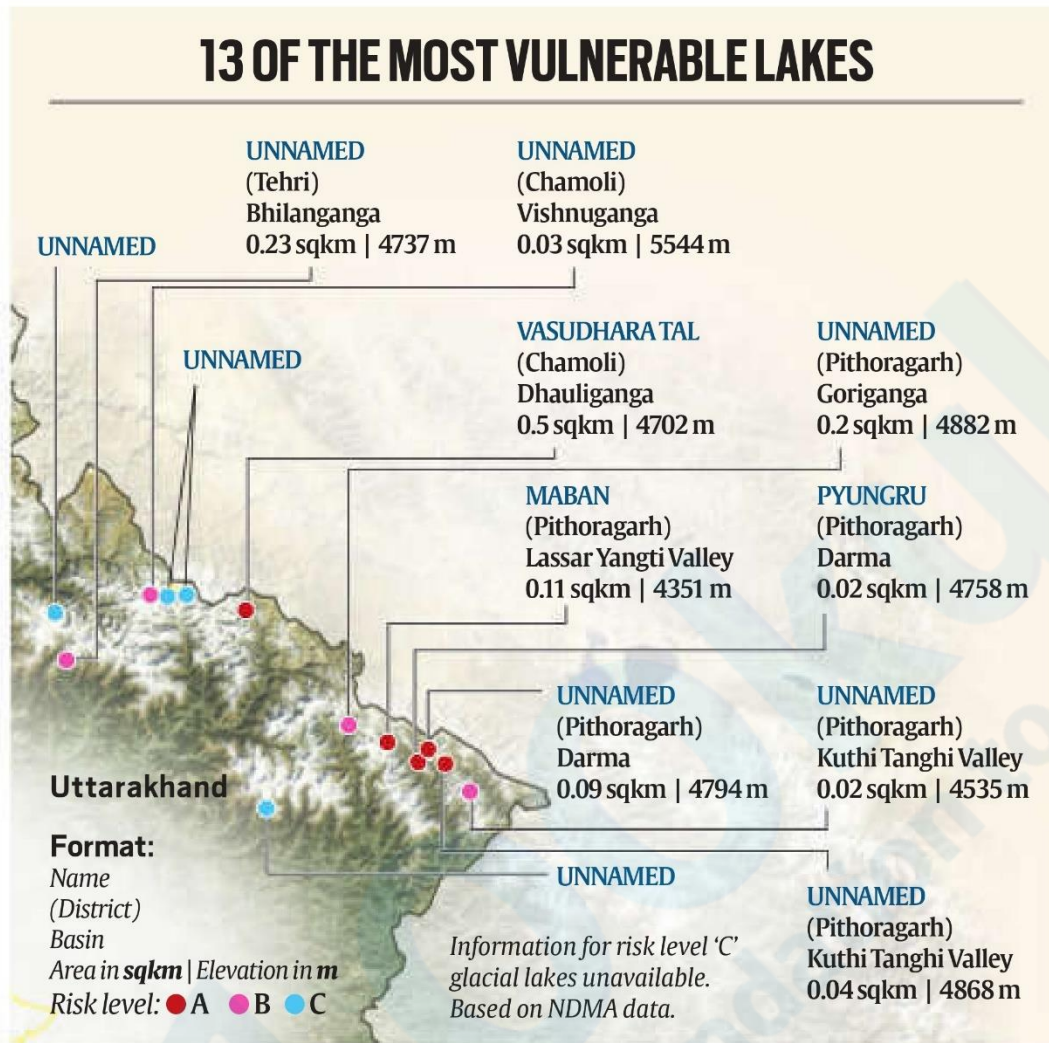


Kodaikanal Solar Observatory

Here, astronomical observations of the Sun, the Moon, bright stars and planets recorded during 1812-1825 were preserved in two large data volumes. **The first dedicated solar observations were recorded later in 1878 from the Trigonometrical Survey Office in Dehradun.**

Back then, astronomy was largely limited to special events like eclipses or planetary transits that drew huge interest from foreign astronomers to visit India. Some of these visitors later settled here and laid a foundation for observatory-based astronomy in the country.

13 OF THE MOST VULNERABLE LAKES



As mentioned earlier, Uttarakhand has 13 glacial lakes which are prone to GLOF. Based on the analysis of available data and research from various technical institutions, these lakes have been categorised into three risk levels: 'A', 'B', and 'C'.

Five highly sensitive glacial lakes fall into the 'A' category. These include Vasudhara Tal in the Dhauliganga basin in Chamoli district, and four lakes in Pithoragarh district — Maban Lake in Lassar Yangti Valley, Pyungru Lake in the Darma basin, an unclassified lake

in the Darma basin, and another unclassified lake in Kuthi Yangti Valley.

The areas of these five lakes range between 0.02 to 0.50 sq km, and they are situated at elevations ranging from 4,351 metres to 4,868 metres.

The rising surface temperatures could worsen the situation in Uttarakhand. The state's annual average maximum temperature may increase by 1.6-1.9 degree Celsius between 2021-2050. This could exacerbate the risk of GLOFs in the state.

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GS 3 – DEFENCE

India's atmanirbhar defence sector

#AtmanirbharInDefence

#DefenceAcquisitionProcedure #SrijanPortal

#iDEX #SIPRI #Defence #GS3

India's defence ecosystem has undergone transformations in several key areas in recent years. Key institutional and policy changes have spurred defence indigenisation, domestic capital procurement and defence exports.

In an era of uncertainty, the goals of Atmanirbhar Bharat (self-reliant India) and Make In India would mitigate risks on account of disruption or manipulation of critical supply chains — the kind of challenges that have constrained Ukraine in its conflict with Russia.

The **Defence Acquisition Procedure (DAP) 2020** prescribed **50 per cent indigenous content (IC) in procurement contracts**. To encourage foreign original equipment manufacturers (OEMs) to set up maintenance and manufacturing facilities in India, a new procurement category — **Buy (Global-Manufacture in India)** — has been introduced. This will enable ab initio indigenisation of spare parts. The **Union Ministry of Defence (MoD)** has released several “Positive Indigenisation Lists” that mention items that must be procured only from domestic sources. Nearly 5,000 items currently imported by the Defence Public Sector Units (DPSUs) and the three Services figure in this list.

The **Srijan Indigenisation Portal** was launched in August 2020. Over 34,000 items currently being imported have been uploaded on the portal — nearly a third of them are already in the process of being indigenised.

Two defence industrial corridors have been established in Tamil Nadu and Uttar Pradesh. These have attracted investments worth Rs 7,000 crore. MoUs for a cumulative potential investments worth over Rs 20,000 crore have also been concluded. In November 2023, the Swedish arms major SAAB announced the first 100 per cent FDI project to manufacture the Carl Gustav M4 rocket system.

There has been laudable progress in building naval platforms. The **INS Vikrant aircraft carrier**, dedicated to the nation by Prime Minister Narendra Modi in September 2022, is the largest warship built in India’s maritime history. It is spawning new technological capabilities across the Indian industry, including SMEs and MSMEs.

The **Indian Navy’s Warship Design Bureau** has launched Project 17A frigates. The **INS Vindhyagiri**, launched in August 2023, is the

latest example of this. There is equal focus on missiles, long-range artillery guns, multi-barrel rocket launchers and tanks, besides advanced radars, sensors and electronic capabilities.

The government recently constituted a committee to undertake a holistic review of the functioning of the Defence Research and Development Organisation (DRDO). Building “fit to purpose” domestic capabilities in defence R&D and innovation, commensurate with the challenges of the 21st century, remains the agency’s guiding principle.

The Centre has stipulated that a significant portion of the defence capital procurement budget should be diverted to the domestic defence industry. Since 2020-21, the capital acquisition budget for domestic procurement has risen from around 40 per cent of the total capital procurement budget (Rs 52,000 crore) to 75 per cent (Rs 99,223 crore) in 2023-24. Moreover, since 2022-23, 25 per cent of this domestic capital procurement budget has been earmarked for purchases from the private sector.

As a result of these initiatives, the value of India’s defence production crossed the Rs 1,00,000 crore mark for the first time in financial year 2022-23 to touch Rs 1,08,684 crore. Defence Public Sector Undertakings accounted for nearly 75 per cent of this.

Significantly, private sector companies accounted for Rs 21,083 crore, about 20 per cent of the total with joint ventures accounting for the rest. The defence production target for 2023-24 is Rs 1,35,000 crore and India expects the value of its defence production to reach Rs 1,75,000 crore by 2025.

The Innovations for Defence Excellence (iDEX) initiative, launched in 2018, aims to involve industry, including MSMEs, start-ups, individual innovators, R&D institutes and academia.

The iDEX Prime framework under iDEX was launched in 2022 to support start-ups with grants-in-aid up to Rs 10 crore to enable the

development of high-end solutions. Funding under the Technology Development Fund (TDF) scheme has been enhanced from Rs 10 crore to Rs 50 crore per project. The DRDO has launched the Dare to Dream Innovation contest to support start-ups and innovation. A quarter of the defence R&D budget in 2023-24 has also been earmarked for academia and private industry.

In 2019, the Stockholm International Peace Research Institute (SIPRI) placed India among the top 25 arms exporters (at 23rd position) for the first time. India has set a defence exports target of Rs 35,000 crore by 2025.

Equally path-breaking is PM Modi's consistent effort to craft policies that provide equal career opportunities to women in the armed forces. This will help the forces in tapping a large pool of latent talent.

The government's Nari Shakti initiative has played a major role in the transformation of the nation, especially the armed forces. Sainik Schools, which have long served as grassroots institutions for recruitment in the armed forces, are no longer a male bastion. The doors of the National Defence Academy have also been thrown open to women. The number of women officers has risen sharply in recent years.

The goal of a Viksit Bharat (developed India) by 2047 requires the defence sector to be more resilient and self-reliant. The transformation underway in the defence industrial complex has set the stage for multiple stakeholders to rally and promote domestic technological innovation while cementing strategic partnerships around the world. The day is not far when India will become an integral part of the global defence value chains.

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Night launch of 'Agni Prime' missile successful

[#AgniPrime](#) [#DRDO](#) [#Defence](#) [#GS3](#)

India has successfully carried out a night launch of new generation nuclear capable ballistic missile 'Agni Prime' from the Abdul Kalam Island off the coast of Odisha, boosting the country's strategic deterrence capability.

The Strategic Forces Command (SFC), along with Defence Research and Development Organisation (DRDO), carried out the flight test of the missile that has a strike range of 1,000 to 2,000 km.

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Army inducts indigenous Akashteer system

[#AkashteerSystem](#) [#BEL](#)
[#AkashteerControlCentres](#) [#IndianArmy](#)
[#Defence](#) [#GS3](#)

The Army has started the induction of control and reporting systems under 'Project Akashteer' to bolster its air defence capabilities.

Developed by Bharat Electronics Limited (BEL), the project is aimed at significantly enhancing the operational efficiency and integration of the Army's air defence mechanisms.

With 2024 designated as the 'Year of Tech Absorption', induction of Akashteer Control Centres will meet the current and futuristic requirements of complex air defence operations.

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Gagan Shakti 2024 exercise

[#GaganShakti24Exercise](#) [#Defence](#) [#GS3](#)

A fighter aircraft lands on the Lucknow-Agra Expressway in Unnao on April 7 as part of the IAF's Gagan Shakti-24 exercise. The 10-day drill, which began on April 1, involves emergency landing facility operations at various locations. The drills aim to test preparations for relief ops during calamities as well as enhance overall operational capabilities of the military.

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Practice Questions

1. With reference to the Green Hydrogen, consider the following statements:

1. It refers to hydrogen that is produced from natural gas through energy-intensive processes.
2. It does not emit carbon on consumption.
3. At present, most hydrogen produced for industrial consumption and applications is 'green' hydrogen.

How many of the statement(s) given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

2. Consider the following statements:

1. In 1792, the British East India Company established this observatory.
2. The Evershed Effect was discovered from the sunspot observations made at this observatory.

3. This observatory is under the Indian Institute of Astrophysics (IIA).
4. This is the only observatory offering high-resolution digitised images for such a long period.

The above-mentioned statements refer to:

- A. Astronomical Observatory, Nainital
- B. Vainu Bappu Observatory
- C. Udaipur Solar Observatory
- D. Kodaikanal Solar Observatory

3. Vasudhara Tal, Maban Lake and Pyungru Lake were recently in news. They are located in:

- A. Uttarakhand
- B. Sikkim
- C. Arunachal Pradesh
- D. Ladakh

4. Consider the following tectonic plates:

1. Nazca
2. Philippine
3. Caribbean
4. Juan de Fuca

How many of the tectonic plates given above have meeting points with the Ring of Fire?

- A. Only one
- B. Only two
- C. Only three
- D. All four

5. With reference to the Akashteer Project, consider the following statements:

1. It is a cutting-edge initiative designed to automate air defence control.
2. It is developed by the DRDO.
3. It will allow for the surveillance of low-level airspace over Indian Army conflict regions, as well as the effective control of Ground Based Air Defence Weapon Systems.

How many of the statements given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

6. Matabari Pera - a dairy-based confectionary item and Pachra - a handwoven cloth used by the state's Indigenous communities have earned the prestigious Geographical Indication (GI) tag. They are associated with:

- A. Tripura
- B. Assam
- C. Nagaland
- D. Sikkim

7. Consider the following states:

1. Assam
2. Meghalaya
3. Nagaland
4. Manipur

How many of the states given above share boundary with Bangladesh?

- A. Only one
- B. Only two
- C. Only three
- D. All four

8. With reference to Kallakadal, consider the following statements:

1. Kallakkadal is essentially coastal flooding during the pre-monsoon season by swell waves on the southwest coast of India.
2. In 2012, the term was formally approved by the United Nations Educational, Scientific and Cultural Organization (UNESCO).
3. Kallakkadal is a name for Tsunami which came under the spotlight after the 2004 tsunami that killed more than 10,000 people.

How many of the statement(s) given above is/are incorrect?

- A. Only one
- B. Only two
- C. All three
- D. None

9. With reference to dark energy, consider the following statements:

1. The hypothesis of dark energy comes mainly from the observed phenomenon of the universe expanding at a rapid rate.
2. Understanding the nature of dark energy is one of the fundamental problems in science right now, because it can offer key insights into the origin and evolution of the universe, as well as its eventual fate.
3. Findings from the observations by the Dark Energy Spectroscopic Instrument or DESI could reveal some clues about dark energy.

How many of the statement(s) given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

10. Recently, Khatiya village in Gujarat's Kutch district and Padta bet were two places seen in news. These are associated with:

- A. Archaeological excavation

- B. Widespread occurrence of an infectious disease
- C. Proposed sites for an agricultural research institute
- D. Tribal festival

11. Consider the following statements:

1. The office of the Election Commission of India (ECI) was set up on January 25, 1950.
2. KVK Sundaram was the first Chief Election Commissioner.
3. Alleppey Lok Sabha constituency saw the highest voter turnouts during the first election (1951-52).

How many of the statement(s) given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

12. Consider the following pairs:

(Volcano)	(Location)
1. Stromboli	Italy
2. Hekla	Denmark
3. Sakurajima	Japan
4. Whakaari	Australia

How many of the pairs given above is/are correctly matched?

- A. Only one
- B. Only two
- C. Only three
- D. All four

13. With reference to the CDP-SURAKSHA, consider the following statements:

1. It is a digital platform integrated with PM-KISAN.
2. It allows an instant disbursement of subsidies to farmers in their bank account by utilising the e-RUPI voucher.

3. The platform can be used to order planting material such as seeds, and seedlings.

How many of the statement(s) given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

14. Consider the following statements:

1. The country has been a safe haven for elephants due to its stable government, and small human population.
2. Recently, the country has decided to give 20,000 elephants to Germany.
3. The Chobe River forms the northern border between Namibia and this country.

The above-mentioned statements refer to which country?

- A. Ghana
- B. Angola
- C. Zambia
- D. Botswana

15. With reference to the hydrogen fuel cell electric vehicle (FCEV), consider the following statements:

1. It utilises hydrogen electrochemically by converting hydrogen stored in a high-pressure tank into electricity.
2. It emits methane as a byproduct.
3. These vehicles are heavier than battery electric vehicles (BEVs).

How many of the statement(s) given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

16. With reference to the solar eclipse, consider the following statements:

1. A solar eclipse takes place when the Moon and Sun are aligned on the same side of Earth.