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MARATHA QUOTA LAW

(Syllabus: GS Paper 2 – Polity)



Maharashtra's latest Maratha quota law

What have commissions said about the law? What is the legislative history of the Bill and will it pass judicial scrutiny, unlike its predecessors? What is the current reservation pool of the State? Why was the earlier Bill struck down by the Supreme Court?

EXPLAINER

Aaratrika Bhaumik

The story so far:

On February 20, the Maharashtra Assembly unanimously passed a Bill granting 10% reservation in education and government jobs to the Maratha community. However, activists have claimed that the new legislation is a "betrayal" of the community and instead seek a Maratha quota carved out from the existing reservation for the Other Backward Classes (OBCs) category.

What does the new Bill entail?

The Bill does not disturb the existing OBC quota and is distinct from the Maharashtra government's earlier notification on the issuance of Kunbi caste certificates to eligible Marathas for inclusion within the OBC category. Thus, non-Kunbi Marathas will continue to be covered under the new law, making the Maratha community eligible for reservations under two separate categories for the first time. However, those who fall within the "creamy layer" bracket will not be entitled to the benefit.

The law has been formulated based on a report by the Justice (retired) Sunil B Shukre-led Maharashtra State Backward Class Commission that claims to have surveyed 1,58,20,264 families across the State. It opined that "exceptional circumstances and extraordinary situations" justify granting reservation to the community beyond the Supreme Court-approved 50% limit. While concluding that the Marathas constitute 28% of the State's population, with 84% of them qualifying as not advanced, it pointed out that such a large backward class cannot be added to the existing reserved categories. The Commission also attributed extreme poverty, decline in agricultural income, and partitions in land holdings as reasons for the declining status of the Marathas.

Not over yet: People celebrate the passing of the Maratha reservation bill, in Mumbai on February 20. PTI

Maharashtra already has 52% reservations, split into Scheduled Castes (13%), Scheduled Tribes (7%), OBC (19%), Vimukta Jati (3%), Nomadic Tribe B (2.5%), Nomadic Tribe C (3.5%), Nomadic Tribe D (2%), and Special Backward Classes (2%). The 10% Economically Weaker Sections (EWS) reservation is also applicable to the State – making the total reservation pool 72% with the inclusion of the new quota.

When was the demand first raised?

The first-ever bid for implementing a law to extend reservation to the Marathas was in 2014 when a non-statutory committee headed by veteran leader Narayan Rane submitted a report to the then Prithviraj Chavan-led Congress-NCP Democratic Front government, stipulating that the Marathas constitute 32% of the population in the State and needed economic upliftment in the form of a special quota. Accordingly, the government passed an ordinance reserving 16% of government jobs and seats in educational institutions for Marathas and 5% for Muslims. However, the Bombay High Court passed an interim order staying the ordinance, pointing out that findings of previous committees such as that of the National Commission for Backward Classes have shown that the Marathas cannot be regarded as a backward class. Referring to the apex court's landmark verdict in *Indra Sawhney versus Union of India* (1992), the Court underscored that the 50% cap for reservations cannot be breached except "in extraordinary situations and for extraordinary reasons."

What has the Supreme Court said?

Following its failed attempt, the government constituted an 8-member statutory commission – the Maharashtra State Backward Class Commission headed by Justice (retired) N.G. Gaikwad to conduct a survey. In its report submitted on November 15, 2018, the Commission recommended granting Marathas 12% reservation in higher education and 13% reservation in public employment. Based on this, the government on November 30, 2018, implemented the Maharashtra State Reservation for Socially and Educationally Backward Classes (SEBC) Act, 2018, which provided the Marathas 16% quota overall in education and government jobs.

However, in May 2021, a five-judge Constitution Bench of the Supreme Court in *Jaishri Laxmanrao Patil versus Chief Minister, Maharashtra* struck it down and held that there were no "exceptional circumstances" that merit the government breaching the 50% ceiling limit to bestow quota benefits on the Maratha community. Declining to revisit its *Indra Sawhney* verdict, the Court said that the 50% cap is now constitutionally recognised. Dismissing the findings of the Gaikwad Commission, the Court observed that the Marathas are a "dominant forward class and are in the mainstream of national life."

Will it pass judicial muster?

According to Alok Prasanna Kumar, Co-Founder and Lead at the Vidhi Centre for Legal Policy, the legislation is unlikely to pass judicial scrutiny. "The Court refused to recognise the Marathas as a socially and educationally backward class. The criteria for granting such a reservation should be based on data which shows that the community suffers from social backwardness. For instance, were they denied access to education and social facilities?" he highlights.

"To breach the SC-ordained 50% reservation cap, exceptional circumstances need to be shown, which is absent in this case. Marathas are politically dominant, and have land holdings – by no metric can they be said to be socially and educationally oppressed," Mr. Kumar adds.

THE GIST

- On February 20, the Maharashtra Assembly unanimously passed a Bill granting 10% reservation in education and government jobs to the Maratha community.
- The law has been formulated based on a report of the Justice (retired) Sunil B Shukre-led Maharashtra State Backward Class Commission that claims to have surveyed 1,58,20,264 families across the State. It opined that "exceptional circumstances and extraordinary situations" justify granting reservation to the community beyond the Supreme Court-approved 50% limit.
- As per Alok Prasanna Kumar, co-Founder and Lead at the Vidhi Centre for Legal Policy, the legislation is unlikely to pass judicial scrutiny.

Context: The Maharashtra Assembly recently passed a Bill unanimously, granting 10% reservation in education and government jobs to the Maratha community.

Maratha Quota Law

- **About:** The Bill maintains the existing OBC quota intact while introducing a separate quota for the Maratha community, distinct from the Maharashtra government's earlier notification regarding Kunbi caste certificates.
- **Exclusion of Creamy Layer**: Individuals falling under the "creamy layer" category within the Maratha community won't benefit from the new law, ensuring reservations target those in need.
- **Basis of Formulation**: The law draws from a report by the Justice (retired) Sunil B Shukre-led Maharashtra State Backward Class Commission, advocating for Maratha reservation due to "exceptional circumstances" and extraordinary situations".
- **Population and Reservation Justification:** The Commission finds that Marathas constitute 28% of the State's population, with 84% not advanced, justifying reservation beyond the Supreme Court-approved 50% limit.

Narayan Rane Committee Report

- **About:** In February 2014, a non-statutory committee led by Narayan Rane recommended Maratha reservation, citing their 32% population in Maharashtra and economic disadvantages.
- **Recommendations Submitted**: Narayan Rane's committee, appointed by the Prithviraj Chavan-led government, submitted a report advocating 16% reservation in government jobs and educational seats for Marathas, along with 5% reservation for Muslims.

Gaikwad Commission's Recommendations

- The commission, headed by Justice (retired) N.G. Gaikwad, recommended 12% reservation in higher education and 13% reservation in public employment for Marathas.
- **Findings of the Commission**: The MSBCC's report highlighted that 76.86% of Maratha families were engaged in agriculture and agriculture labor.
- Additionally, it noted that 6% were in government and semi-government services, 3% in private services, 4% in trade and industry, and 9% in non-agricultural physical labor.

METHANESAT
(Syllabus GS Paper 3 – Sci and Tech)



METHANESAT

A satellite that will name and shame the worst methane emitters on Earth

ALIND CHAUHAN
NEW DELHI, MARCH 5

METHANESAT, a washing machine-sized satellite that will track and measure methane emissions on a global scale, was launched aboard a SpaceX Falcon9 rocket from California on Monday.

Why track methane emissions?

Methane is the most widespread greenhouse gas after carbon dioxide. Its atmospheric concentration has more than doubled in the last couple of centuries — this increase is responsible for 30% of climate warming since the Industrial Revolution. Over a period of 20 years, methane is about 80 times more potent at warming than carbon dioxide, according the UN Environment Programme.

Methane also contributes to the formation of ground-level ozone, exposure to which could be contributing to a million premature deaths every year, according to a 2022 report.

It is crucial to cut methane emissions from their main source: fossil fuel operations, which account for about 40% of all human-caused methane emissions. The objective of MethaneSAT is to help achieve this goal.

What is MethaneSAT?

The entity behind MethaneSAT is the Environmental Defense Fund (EDF), a US-based nonprofit environmental advocacy. EDF partnered with Harvard University, the Smithsonian Astrophysical Observatory, and the New Zealand Space Agency to build the satellite.

MethaneSAT will orbit the Earth 15 times a day, monitoring the oil and gas sector. It will generate data that will show "how much methane is coming from where, who's responsible, and are those emissions going up or down over time", EDF said in a statement.

MethaneSAT's data will be made public for free in near real-time. This will allow stakeholders and regulators to take action to reduce methane emissions.

Where does MethaneSAT score?

Historically, tracking the source of methane emissions and measuring them has presented a challenge. Satellites that can provide high-resolution data can often only scan specific, pre-targeted sites; others can examine larger areas and detect large emitting events, but not "smaller sources that account for the majority of emissions in many, if not most, regions," EDF said. Due to these limitations, global methane emissions are about 70% higher than levels reported by national governments, according to a report by the International Energy Agency (IEA).

MethaneSAT is expected to fix this problem. It is equipped with a high-resolution infrared sensor and a spectrometer, and can track differences in methane concentrations as small as three parts per billion in the atmosphere — which enables it to pick up smaller emissions sources than the previous satellites. MethaneSAT also has a wide-camera view of about 200 km by 200 km, allowing it to identify larger, so-called "super emitters".

According to a report in *The New York Times*, "the new satellite is also designed to track releases over time, to see whether they're increasing or decreasing, and by how much".

The collected data will be analysed using cloud-computing and AI technology developed by Google — the company is a mission partner — and will be made public through Google's Earth Engine platform, *The NYT* report said.

Context: Recently, Methanesat, a satellite about the size of a washing machine designed to track and measure methane emissions worldwide, was **launched aboard a SpaceX Falcon9 rocket from California.**

MethaneSAT

- **About:** It is a satellite project initiated by the Environmental Defense Fund (EDF), a US-based nonprofit environmental advocacy group.
- **Collaboration:** The satellite development involves partnerships with Harvard University, the Smithsonian Astrophysical Observatory, and the New Zealand Space Agency.
- **Orbit and Frequency:** MethaneSAT will orbit the Earth 15 times a day, focusing on monitoring the oil and gas sector.
- **Data Objective**: The primary goal is to collect data on methane emissions, determining their sources, responsibility, and trends over time.
- **Real-time Accessibility**: The data collected by MethaneSAT will be made public and available for free in near real-time.
- **Impact:** Public access enables stakeholders and regulators to promptly address and mitigate methane emissions.
- **Features**
  - **Sensor Technology**: MethaneSAT is equipped with a high-resolution infrared sensor and a spectrometer.
  - **Resolution Capability:** It can detect methane concentrations as small as three parts per billion, addressing the limitations of previous satellites.
  - **Identification of "Super Emitters":** The satellite can identify significant emitters, referred to as "super emitters," contributing to a comprehensive understanding of methane sources.

Methane Emissions

- **Status**: Methane ranks as the second most prevalent greenhouse gas following carbon dioxide, with its atmospheric concentration more than doubling in recent centuries.
- **Contribution to Climate Change**: Methane's increased concentration is accountable for approximately 30% of climate warming since the onset of the Industrial Revolution. It possesses about 80 times the warming potency of carbon dioxide over a 20-year period, as per the UN Environment Programme.

THE HINDU Page 10

SOUTH CHINA SEA
(Syllabus: GS Paper 2 – IR)

Philippine and Chinese vessels collide in disputed South China Sea

Four Filipino crew members were injured and Manila's vessel suffered minor structural damage in separate incidents; U.S., Australia and Japan condemn Beijing's actions which transpired ahead of an ASEAN summit taking place in Melbourne

Associated Press
MANILA



Bone of contention: Chinese vessels deploy water cannons at a civilian boat operated by Philippine military in South China Sea. AFP

Chinese and Philippine coast guard vessels collided in the disputed South China Sea and four Filipino crew members were injured on Tuesday in high-seas confrontations as Southeast Asian leaders gathered for an ASEAN summit where alarm over Beijing's aggression at sea was expected to be raised.

The Chinese Coast Guard ships and accompanying vessels blocked the Philippine Coast Guard and supply vessels off the disputed Second Thomas Shoal and executed dangerous manoeuvres that caused two minor collisions between the Chinese ships and two of the Philippine vessels, Philippine officials said.

The *BRP Sindangan* of the Philippine Coast Guard had minor structural damage from the collision that happened shortly after dawn.

Over an hour later, another Chinese coast guard ship first blocked and then collided with a supply boat the Philippine coast guard was escorting, the Philippine officials said.

Canon attack

The supply boat, manned by Filipino Navy personnel, was later hit by water cannon blasts from two Chinese coast guard ships. Its windshield shattered, injuring at least four Filipino crew members, according to a statement from the Philippine government task force dealing with territorial disputes.

The task force said the actions by the Chinese was "another attempt to illegally impede or obstruct a routine resupply and rotation mission."

"China's latest unprovoked acts of coercion and dangerous maneuvers" against Philippine ships en route to deliver supplies and fresh troops to the Philippine-occupied shoal "put the lives of our people at risk and caused actual injury to Filipinos," it said.

Envoy summoned

The Department of Foreign Affairs in Manila summoned China's Deputy Ambassador to convey a protest against the Chinese coast guard's actions, which it said were unacceptable.

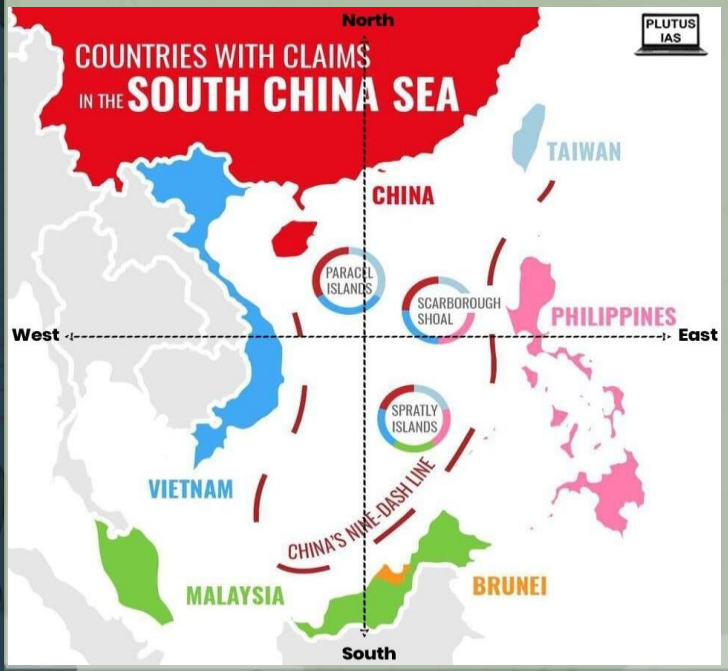
A small Philippine marine and Navy contingent has kept watch onboard a rusting warship, the *BRP Sierra Madre*, which has been marooned since the late 1990s in the shallows of the Second Thomas Shoal.

China also claims the shoal lying off the western Philippines and has surrounded the atoll with coast guard, Navy and other ships to press its claims and prevent Filipino forces from delivering construction materials to fortify the *Sierra Madre* in a decades-long standoff.

The shoal has been the site of several tense skirmishes between Chinese and Philippine coast guard ships last year.

Washington strongly condemned the Chinese coast guard's actions and its Ambassador in Manila, MaryKay Carlson, said the U.S. stands with the Philippines and proponents of international law. Australia and Japan separately expressed their concern over China's actions.

The long-simmering territorial disputes in the South China Sea are expected to be discussed at a summit of leaders of the Association of Southeast Asian Nations and their Australian counterpart on Wednesday in Melbourne.



Context: Recently, Chinese and Philippine coast guard vessels collided in the disputed South China Sea, injuring four Filipino crew members amid Southeast Asian leaders' assembly for an Asian summit, where concerns over Beijing's sea aggression were anticipated to be addressed.

South China Sea

- **About**: It is one of the world's busiest waterways and plays a crucial role in global trade and merchant shipping.
- **Location**: The South China Sea is a marginal sea of the Western Pacific Ocean
- **Bordering Countries**: The People's Republic of China, the Republic of China (Taiwan), the Philippines, Malaysia, Brunei, Indonesia, Singapore and Vietnam.
- **Straits**: Taiwan Strait, connecting to the East China Sea; the Luzon Strait, linking to the Philippine Sea; straits surrounding Palawan, connecting to the Sulu Sea; the Strait of Singapore, providing access to the Strait of Malacca; and the Karimata and Bangka Strait, connecting to the Java Sea.
- **Reason for Dispute**: The South China Sea disputes involve claims over maritime territories and islands by various sovereign states in the region.
- **Countries Party dispute**: China, Brunei, Taiwan, the Philippines, Vietnam, Malaysia, Indonesia etc.

Claims Over Islands

- **The Paracel Islands**: Claimed by China, Taiwan and Vietnam.
- **The Spratly Islands**: Claimed by China, Taiwan, Malaysia, Vietnam, Brunei and the Philippines.
- **The Scarborough Shoal**: Claimed by the Philippines, China and Taiwan.

DTE

Mar 5

AVALANCHE

(Syllabus: GS Paper 1 – Geography)

Excess snowfall, avalanche in Himachal block Chenab river flow

Context: Recently, following an extended dry period, Himachal Pradesh has seen substantial snowfall and rain over the past four days, resulting in an overall recorded 508 percent excess rain and snowfall, with incidents of avalanches reported in several districts of the state.

Avalanche

- **About:** It is a mass of material rapidly moving down a slope.
  - It is typically triggered when the material on a slope breaks loose from its surroundings, and this material quickly collects and carries additional material down the slope.
- **4 Types of Avalanches:** Loose Snow Avalanche, Slab Avalanche, Powder Snow Avalanche, and Wet Snow Avalanche.
- **Causes of Avalanche**: The probability of avalanches may be increased or decreased by several other terrain features, such as slope shape, a slope's exposure to sun and wind, and elevation.
- **Trigger Factors**: Avalanches are commonly triggered by factors such as snowpack instability or sudden disturbances.
- **Prone areas of avalanche**: The snowy region of the Western Himalayas is particularly prone to avalanches. It includes higher areas in Jammu and Kashmir, Himachal Pradesh, and Uttaranchal.

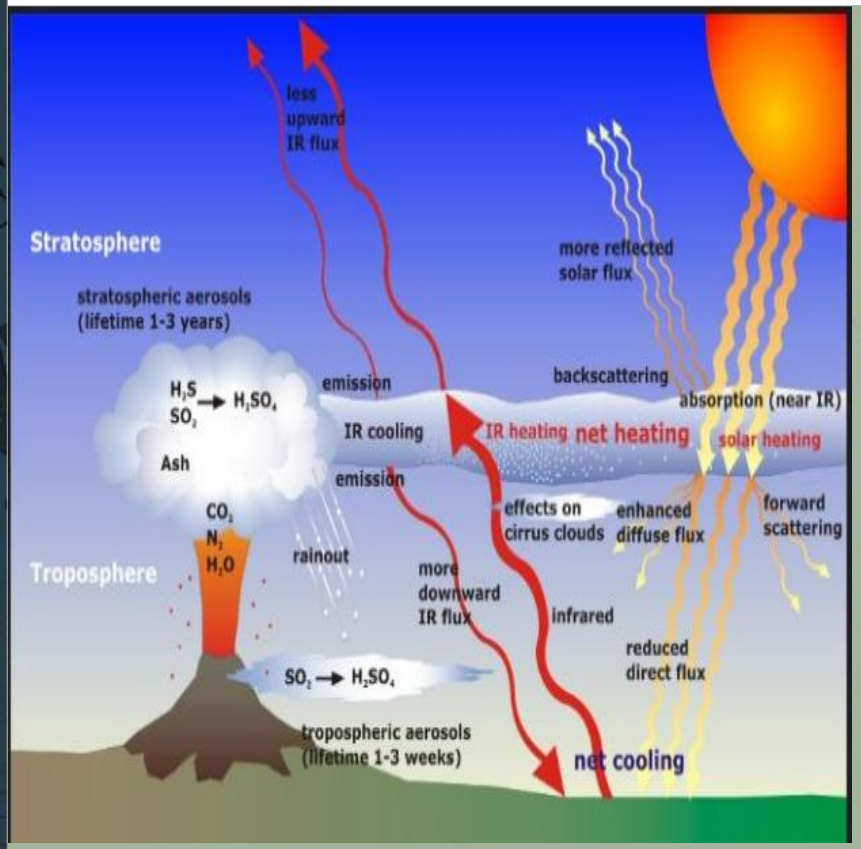
Difference between avalanches and Landslides

- **Environmental context**: Landslides can transpire across diverse environments, triggered by factors like rainfall, earthquakes, or human intervention.
- **Material Composition**: Landslides comprise the movement of rock, earth, or debris down a slope or cliff.
- **Triggered Factor**: Landslides can be instigated by heavy rain, seismic activity, volcanic eruptions, or human alterations to the landscape.

INDIA TODAY Mar 5

VOLCANIC WINTER
(Syllabus: GS Paper 1 – Geography)

Could a volcanic winter cool down Earth? New study has the answer



Context: Researchers from NASA used advanced computer modelling to simulate super-eruptions like the Toba event and found that volcanic winter would probably not exceed 1.5 degrees Celsius.

Volcanic Winter

- **About:** It is a reduction in global temperatures caused by droplets of sulfuric acid obscuring the Sun and raising Earth's albedo after a large, sulfur rich, particularly explosive volcanic eruption.
- **Formation**: SO2 and H2S react with hydroxyl (OH) and water (H2O) in the stratosphere, forming sulfuric acid (H2SO4) droplets, which contribute significantly to Earth's albedo.
- **Radiative Effects and Surface Cooling**: The resultant H2SO4 aerosols increase Earth's albedo, reflecting solar radiation back into space, thereby cooling the surface temperature of the planet.
- **Stratospheric Warming and Prolonged Cooling**: While volcanic aerosols cool the surface, they warm the stratosphere by absorbing terrestrial radiation, creating a complex interplay of atmospheric dynamics.
- **Stratosphere-Troposphere Interaction**: The air between the troposphere and stratosphere eventually mixes, causing the volcanic particles to fall into the troposphere.
    - Subsequent precipitation brings these particles down to Earth.
- **Occurrence**: A massive volcanic eruption can deposit enormous amounts of ascending light colored volcanic ash and sulfur aerosols above the troposphere and into the lower stratosphere.
- **Historical Impact**: The ash produced from the eruption of Mount Etna in 44 B.C. dimmed the Sun's rays, causing a cooling effect.
    - This cooling led to crop failure, famine, and significant challenges in ancient Rome and Egypt.

BUSINESS STANDARD

Mar 5

RISA TEXTILE

(Syllabus: GS Paper 3 – Economy)

Tripura's traditional attire 'Risa' gets GI tag: Chief Minister Manik Saha

Context: Tripura's traditional attire, 'Risa,' has been officially granted the coveted Geographical Indication (GI) registration.

Risa Textile

- **About:** Risa is a handwoven cloth used as a female upper garment and headgear, stole, or present to express respect.
- **Significance**: It is woven in colorful designs and holds crucial social and religious significance.
- **Adolescent Tradition**: Adolescent Tripuri girls receive a risa around age 12 to 14 in an event called Risa Sormani.
- **Religious Relevance**: Risa is utilized in various religious contexts like Garia Puja, weddings, festivals, and as winter attire.
- **Symbol of Honor**: It is presented as a mark of honor to distinguished recipients.
- **Tribal Tradition**: Risa is common among all 19 indigenous tribal communities of Tripura.
- **Components of Traditional Attire**: Risa, Rignai, and Rikutu.
    - **Risa in Attire**: It serves as the female upper garment in traditional Tripuri attire.
    - **Rignai**: Meaning 'to wear,' is primarily worn as the lower garment.
    - **Rituku**: It is used as a wrap or head covering, akin to a 'chunri' or 'pallu' of the Indian saree.
- **Historical Roots**: The complete Tripuri attire, including risa, rignai, and rikutu, traces its origins to the time of the Manikya kings, who ruled Tripura for over 500 years from the 15th century.



GI Tag

- **About**: It is a symbol used on **items that come from a particular geographical area** and have qualities or a reputation linked to that place of origin.
- **Nodal Ministry**: Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.
- **Tenure**: 10 Years
- **Regulated By**: Geographical Indications of Goods (Registration & Protection) Act, 1999.
- **India's First GI Product:** Darjeeling Tea (2004-05)

PIB

Mar 5

LORD BUDDHA

(Syllabus: GS Paper 1 – History)

PM hails ideals of Lord Buddha

Context: Recently, as millions of devotees in Thailand paid obeisance to the sacred relics of Lord Buddha and his disciples Arahant Sariputta and Arahant Maha Moggallana in Bangkok, the Prime Minister of India hailed the ideals of Lord Buddha.

Lord Buddha

- **About**: Lord Buddha (Siddhartha Gautam) was born into the royal family of the Sakya clan, ruling from Kapilvastu, Lumbini, in the Terai plains of southern Nepal.
    - At the age of 29, Gautama left home, renouncing his life of riches to embrace extreme self-discipline as an ascetic.
- **Attainment of Enlightenment**: After 49 consecutive days of meditation, Gautama attained Bodhi (enlightenment) under a pipal tree at Bodhgaya, a village in Bihar.
- **Dharma Chakra Pravartana**: Buddha delivered his first sermon in the village of Sarnath, near Varanasi in Uttar Pradesh, on Asadha Purnima, an event known as Dharma Chakra Pravartana (turning of the wheel of law).
- **Five Precepts**: Killing, stealing, sexual misconduct, lying and intoxication.
- **Eightfold Path in Buddhism**: Right Understanding, Right Thought, Right Speech, Right Action, Right Livelihood, Right Effort, Right Mindfulness and Right Concentration.
- **Significance of Guru Poornima**: The day of Buddha's first sermon is observed as Guru Poornima by both Buddhists and Hindus, marking reverence to their Gurus.
- **Major Teachings of Lord Buddha:**
    - **Three Marks of Existence**: Impermanence (anicca), unsatisfactoriness (dukkha), and non-self (anatta) are the characteristics of all phenomena that one should understand and accept.
    - **The Four Noble Truths**: These truths revolve around the nature of suffering, its cause (ignorance, attachment, and aversion), its cessation, and the path to its cessation.

DTE

Mar 5

ARCTIC REGION

(Syllabus: GS Paper 1 – Geography)

Arctic could go without ice for first time by 2030 under all emission scenarios: Study



Context: The Arctic is projected to go ice-free for the first time by August or September of 2030 under all emission scenarios, according to a new study.

Arctic Region

- **About**: It is a polar region located at the northernmost part of Earth.
- **Consist of:** Canada, Greenland, Iceland, Norway, Sweden, Finland, Russia, and the United States.
- **Mineral Resources and Hydrocarbons**: The Arctic region holds substantial reserves of minerals such as coal, gypsum, diamonds, zinc, lead, placer gold, and quartz. Greenland alone possesses a significant portion of the world's rare earth reserves.
    - The Arctic contains about 30% of the world's undiscovered natural gas, making it a valuable source of hydrocarbon resources.
- **Addressing India's Energy Needs**: With India being the third-largest energy-consuming country and oil importer globally, the melting ice in the Arctic facilitates easier access to these resources.
- **Ocean Circulation and Climate Regulation**: The Arctic plays a crucial role in circulating the world's ocean currents, influencing the movement of cold and warm water globally.
- **Arctic-Himalaya Link:** Despite their geographical separation, the Arctic and the Himalayas share interconnected environmental concerns.
    - The Arctic's melting contributes to a better understanding of glacial melt in the Himalayas, often referred to as the 'third pole.'
- **Arctic Council**: It is an intergovernmental forum that addresses issues faced by Arctic Govts and indigenous people of the Arctic.
- **Arctic Circle Boundaries**: The Arctic Circle intersects only Kola and Chukchi Peninsulas, as well as the Davis and Denmark Straits.
- **Arctic Tribes**: The tribes of the Arctic include Aleut, Athabaskan, Gwich'in, Inuit, and Saami.

ALL INDIA RADIO

Mar 5

PROJECT SEABIRD

(Syllabus: GS Paper 3 – Sci and Tech -Defence)

Defence Minister Rajnath Singh to Inaugurate Key Infrastructure at Naval Base Karwar for Project Seabird Expansion

Context: Raksha Mantri Rajnath Singh will inaugurate two big piers and seven towers with 320 homes tomorrow for Navy officers and Defence civilians as part of **Project Seabird in Naval Base Karwar in Karnataka**.

Project Seabird:

- **About:** It is an ambitious naval infrastructure project that involves the establishment of a naval base at Karwar, Karnataka, on India's west coast.
- **History**: In the post-Indo-Pak War of 1971 scenario, India recognized the need for an additional naval base due to congestion at Mumbai Harbour, prompting security concerns for its Western Fleet.
- **Foundation**: Sanctioned in 1985, the naval infrastructure project at Karwar, Karnataka, began with the laying of the foundation stone on October 24, 1986, by Rajiv Gandhi.
- **Project Scope**: The project involves the creation of a naval base at Karwar, Karnataka, on the west coast of India, including a deep-sea harbor, breakwaters dredging, a township, a naval hospital, a dockyard uplift center, and a ship lift.
- **Phase Completion**: The first phase, commissioned in 2005, included critical infrastructure such as the deep-sea harbor and support facilities.
- **Phase 2 Development**: Phase 2 of INS Kadamba commenced in 2011, aiming to expand the base's capacity to accommodate additional warships, submarines, and a new Naval Air Station.
- **Future Scale**: Once fully realized, the project will establish the largest naval base in the Eastern Hemisphere, capable of hosting approximately 32 warships, 23 submarines, and multiple aircraft hangars.

INDIAN EXPRESS Page 17

CORAL REEF

(Syllabus: GS Paper 3 – Env and Eco)

FOURTH MASS CORAL REEF BLEACHING EVENT SOON: WHAT NOAA SAID

THE WORLD is on the verge of a fourth mass coral bleaching event that could see wide swathes of tropical reefs die, including parts of Australia's Great Barrier Reef, the US National Oceanic and Atmospheric Administration (NOAA) has said.

Marine biologists are on high alert following months of record-breaking ocean heat fuelled by climate change and the El Nino climate pattern.

"It's looking like the entirety of the Southern Hemisphere is probably going to bleach this year," said ecologist Derek Manzello, the coordinator of NOAA's Coral Reef Watch which serves as the global monitoring authority on coral bleaching risk.

"We are literally sitting on the cusp of the worst bleaching event in the history of the planet," he said.

Triggered by heat stress, coral bleaching occurs when corals expel the colourful algae living in their tissues.

Without these helpful algae, the corals become pale and are vulnerable to starvation and disease.

Coral bleaching can be devastating for the ocean ecosystem, as well as fisheries and tourism-based economies that depend on healthy, colourful reefs to attract scuba divers and snorkellers.

The last global mass coral bleaching event ran from 2014 to 2017, during which time the Great Barrier Reef lost nearly a third of its corals.

Previous global bleaching events occurred in 2010 and 1998.

For an event to be deemed global, widespread bleaching must occur in three ocean basins — the Atlantic, Pacific and Indian.

Scientists assess sea surface temperature data and satellite imagery to determine whether reef pixels are passing key thresholds of bleaching.

To merit a global mass bleaching event, a certain percentage of reef pixels need to reveal a level of heat stress in each ocean basin.

REUTERS

Context: According to the U.S. National Oceanic and Atmospheric Administration (NOAA), the world is recently on the verge of a fourth mass coral bleaching event, potentially leading to the death of vast stretches of tropical reefs, including portions of Australia's Great Barrier Reef.

Key Points

- **Ocean Heat and Climate Alert:** Marine biologists are on high alert due to months of record-breaking ocean heat fueled by climate change and the El Nino climate pattern.
- **Coral Bleaching Process**: Coral bleaching occurs when corals expel colorful algae living in their tissues due to heat stress.
- **Consequences of Coral Bleaching**: Without algae, corals become pale, vulnerable to starvation, and disease, which can devastate the ocean ecosystem, fisheries, and tourism-based economies.
- **Previous Global Bleaching Events**: The last global mass coral bleaching event was from 2014 to 2017, resulting in significant coral loss, including nearly a third of the Great Barrier Reef.
- **Monitoring Bleaching Through Data**: Scientists utilize sea surface temperature data

Coral Reef

- **About:** Coral reefs are some of the most diverse ecosystems in the world.
- **Structure**: Coral reefs are massive structures made of limestone deposited by coral polyps.
- **Referred to as:** **Rainforests of the sea,"**
  - Coral reefs support approximately 25 percent of all known marine species
- **Condition:** he ideal depths for coral growth **are 45 m to 55 m** below sea surface.
- **Sunlight**: Abundant **sunlight** available.
- **Temperature:** The temperature of the water should be **around 20°C**.
- **Types of corel reef:** Fringing Reefs, Barrier Reefs, Atolls
- **Coral reef in India**: Andaman and Nicobar Islands, Gulf of Mannar, Gulf of Kutch, Palk Strait and the Lakshadweep islands
- **Coral Bleaching:** When corals are stressed by changes in conditions such as temperature, light, or nutrients, they expel the symbiotic algae microscopic algae called zooxanthellae living in their tissues, causing them to turn completely white.

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