

INDIAN HERITAGE AND CULTURE, HISTORY**Rare life-size stucco figurine unearthed in Telangana**

Archaeologists in Telangana have unearthed a rare treasure in the form of a life-sized stucco sculpture from a Buddhist site at Phanigiri.

What is stucco?

- Stucco is a material made of aggregates, a binder, and water. Stucco is applied wet and hardens to a very dense solid.
- It is used as a decorative coating for walls and ceilings, and as a sculptural and artistic material in architecture.
- Stucco may be used to cover less visually appealing construction materials, such as metal, concrete, cinder block, or clay brick and adobe.

About the Bodhisattva statue

- It is the biggest stucco sculpture found in the country so far.
- The life-size figurine found in the excavations is thought to represent one of Bhodhisattva in Jathaka Chakra.
- The stucco is about 1.73 metres in height and 35 cm in width, thus the biggest stucco sculpture found in the country so far
- Apart from the life-sized stucco, these excavations brought to light a Mahastupa, apsidal chaitya grihas, votive stupas, pillared congregation halls, viharas, platforms with staircases at various levels.
- It also had sculptural panels with Brahmi inscriptions, belonging to Satavahana period from first century BC, continued with Mahayana till the end of Ikshvaku period and others in third-fourth century AD.

About Ikshvaku Dynasty

- The Ikshvaku dynasty, in Puranic literature, was a dynasty founded by the legendary king Ikshvaku. The dynasty is also known as Sūryavarṇa (the Solar dynasty).
- Lord Rama belonged to the Ikshvaku dynasty.
- Twenty-two out of the twenty-four Jain Tirthankara belonged to this dynasty.
- Rishabha is present in both Hindu as well as Jain mythology. Both refers to the same person.
- According to the Buddhist texts, Prince Siddhartha belonged to this dynasty.
- The Buddhist text, Mahavamsa traces the origin of the Shakyas to king Okkaka (Pali equivalent to Sanskrit Ikshvaku) and gives their genealogy from Mahasammata, an ancestor of Okkaka.

750th birth anniversary of Vedanta Desikan

Vice-President has unveiled commemorative postage stamps on the 750th birth anniversary of ‘Vedanta Desikan’ a religious philosopher.

Vedanta Desikan (1268–1369)

- Sri Vedanta Desikan was a Sri Vaishnava philosopher and one of the most brilliant stalwarts of Vaishnavism in the post-Ramanuja period.
- He was a poet, devotee, philosopher and master-teacher (desikan).
- He was the disciple of Kidambi Appullar, also known as Aathreya Ramanujachariar, who was of a master-disciple lineage that began with Ramanuja.
- He composed many different works in languages such as Tamil, Sanskrit, Prakrit and Manipravala (a mixture of Sanskrit and Tamil).

His work

- He was known by various titles such as ‘Kavitarkika-kesari’ and ‘Kavitarkika-simham’, the lion amongst poets; and ‘Ramanuja-daya-patram’, the recipient of Ramanuja’s causeless mercy, given in a laudatory verse composed by the famous Brahma Tantra Svatantra Swami.
- He is known as Sarva-tantra-svatantra or a master of science, philosophy, arts and crafts.

GEOGRAPHY

How Cyclones are Named

The newest cyclone to emerge out of the Bay of Bengal has been named Fani. Before that, there were cyclones Hudhud in 2014, Ockhi in 2017 and Titli and Gaja in 2018. Each Tropical Cyclone basin in the world has its own rotating list of names. For cyclones in the Bay of Bengal and Arabian Sea, the naming system was agreed by eight member countries of a group called WMO/ESCAP and took effect in 2004.

Naming a Cyclone

- There are five tropical cyclone regional bodies, i.e. ESCAP/WMO Typhoon Committee, WMO/ESCAP Panel on Tropical Cyclones, RA-I Tropical Cyclone Committee, RA-IV Hurricane Committee, and RA-V Tropical Cyclone Committee.
- In general, tropical cyclones are named according to the rules at a regional level.
- The WMO/ESCAP Panel on Tropical Cyclones at its twenty-seventh Session held in 2000 in Muscat, Oman agreed in principle to assign names to the tropical cyclones in the Bay of Bengal and Arabian Sea.
- After long deliberations among the member countries, the naming of the tropical cyclones over north Indian Ocean commenced from September 2004.
- Eight countries — India, Pakistan, Bangladesh, Maldives, Myanmar, Oman, Sri Lanka and Thailand participated in the panel and came up with a list of 64 names.
- If public wants to suggest the name of a cyclone to be included in the list, the proposed name must meet some fundamental criteria, the RSMC website says.
- The name should be short and readily understood when broadcast.
- Further, the names must not be culturally sensitive and should not convey any unintended and potentially inflammatory meaning.

NORTHERN INDIAN OCEAN CYCLONE NAMES

Contributors	List 1	List 2	List 3	List 4	List 5	List 6	List 7	List 8
Bangladesh	Onil	Ogni	Nisha	Giri	Helen	Chapala	Ockhi	Fani
India	Agni	Akash	Bijli	Jal	Lehar	Megh	Sagar	Vayu
Maldives	Hibaru	Gonu	Aila	Keila	Madi	Roanu	Mekunu	Hikaa
Myanmar	Pyarr	Yemyin	Phyan	Thane	Nanauk	Kyant	Daye	Kyarr
Oman	Baaz	Sidr	Ward	Murjan	Hudhud	Nada	Luban	Maha
Pakistan	Fanoos	Nargis	Laila	Nilam	Nilofar	Vardah	Titli	Bulbul
Sri Lanka	Mala	Rashmi	Bandu	Viyaru	Ashobaa	Maaruthaa	Gaja	Pawan
Thailand	Mukda	Khai Muk	Phet	Phailin	Komen	Mora	Phethai	Amphan

How naming takes place?

- These countries submitted eight names each, which are arranged in an 8×8 table.
- The first cyclone after the list was adopted was given the name in the first row of the first column — Onil, proposed by Bangladesh.
- Subsequent cyclones are being named sequentially, column-wise, with each cyclone given the name immediately below that of the previous cyclone.
- Once the bottom of the column is reached, the sequence moves to the top of the next column.
- So far, the first seven columns have been exhausted, and Fani (again proposed by Bangladesh) is the top name in the last column.
- The next cyclone will be named Vayu. The lists will wind up with Cyclone Amphan, whenever it comes.

When the lists end

- After the 64 names are exhausted, the eight countries will propose fresh lists of names.
- The lists for storms in the Atlantic and Eastern Pacific basins are, however, rotated.

- Exception are, however, made in certain cases — if a storm causes excessive death and destruction, its name is considered for retirement and is not repeated; it is replaced with another name.

Why name cyclones?

- It is generally agreed that appending names to cyclones makes it easier for the media to report on these cyclones, heightens interest in warnings, and increases community preparedness.
- Names are presumed to be easier to remember than numbers and technical terms.
- The practice of naming a storm/tropical cyclone would help identify each individual tropical cyclone.
- The purpose of the move was also to make it easier for people to easily understand and remember the tropical cyclone/hurricane in a region, thus to facilitate disaster risk awareness, preparedness, management and reduction.
- It does not confuse the public when there is more than one tropical cyclone in the same area.
- Many agree that appending names to storms makes it easier for the media to report on tropical cyclones, heightens interest in warnings and increases community preparedness.
- It's easier and less confusing to say "Cyclone Fani" than remember the storm's number or its longitude and latitude.

Ross Ice Shelf

Antarctica's Ross Ice Shelf, the world's largest ice shelf roughly the size of France is melting rapidly.

Ross Ice Shelf

- An international team of scientists has found out that this ice shelf is melting 10 times faster than the overall average, due to solar heating of the surrounding ocean surface.
- The melting ice shelf has led to global sea-level rise of around 13.8mm over the last 40 years.
- Solar heating of the surrounding ocean surface spurred the rate at which the ice is melting.
- Using instruments deployed through a 260 metre-deep borehole, the team measured temperature, salinity, melt rates and ocean currents in the cavity under the ice.
- Earlier, scientists believed that heat radiating to the bottom melted the underside of the shelf, while the ocean surface cooled down quickly.
- However, the latest findings show that heat in the ocean surface plays a crucial role.

Why is it alarming?

- Antarctica comprises 90 per cent of the world's ice.
- The Ross Ice Shelf is the largest ice shelf of Antarctica (as of 2013 an area of roughly 500,809 square kilometres and about 800 kilometres across: about the size of France)
- If this situation continues, sea-levels would rise up to 60 metres by 2050 — and the ocean would engulf coastal cities across the globe.

CONSTITUTION AND POLITY**Not Justice**

- The three-member panel probing charges of sexual harassment against Chief Justice Ranjan Gogoi had a task much broader and more critical than its stated remit.
- Given that it was investigating allegations levelled against the highest office of the country's apex court, the panel needed to answer questions that pertained, inevitably, to the integrity of the institution itself.
- Upon it also lay the onus of instituting procedures that mitigated the unequal power relations in a case where a former junior employee of the court was ranged against the CJI.
- In a report submitted, the panel has given a clean chit to CJI Gogoi. It has "found no substance" in the charges.
- But this denouement — an ex parte report, which will not be made public — raises more questions than it answers.

Proceedings**Complaints regarding Procedure**

- The committee comprising Justices S A Bobde, Indira Banerjee and Indu Malhotra wrapped up the inquiry in sittings over four days, three of which were devoted to questioning the complainant.
- On the third day, the complainant withdrew from the probe alleging that the panel did not adopt “a procedure that would ensure fairness and equality”.
- She accused the committee of not informing her about its procedures, denying her legal help, not recording its proceedings and not providing her with a copy of her depositions before it.

Power Asymmetry

- Each of these four points raises issues of power asymmetry.
- The committee’s task was, no doubt, complicated by the fact that the SC’s “in-house procedures” do not have provisions to deal with charges against the CJI.
- But the apex court has, over the years, also interpreted and re-interpreted Articles 14, 15, 19 and 21 of the Constitution to lay down the rights of working women.
- The probe was a chance to extend such jurisprudence to a situation inside the institution of the court.

Concerns with ex parte investigation

- The panel’s recourse to an ex-partे investigation is problematic.
- Aside from the fact that such a probe is against the principles of natural justice..
- And by not making its report public, the panel has come up short on the requirement of transparency .
- It has argued that the verdict in Indira Jaising vs Supreme Court of India does not enjoin placing in public “the report of a committee constituted as a part of the In-House Procedure”.
- But surely a probe into an issue where the institutional propriety of the SC is in question cannot hearken to pre-RTI jurisprudence — which Indira Jaising is.

Conclusion: The panel’s verdict goes against the Court’s tradition of interpreting the law creatively for the sake of upholding and strengthening constitutional morality. The Court has corrected itself in the past. It should do so again.

Supreme Court pushes for ‘full’ strength of 31

At one stroke, the Supreme Court Collegium, led by CJI has recommended two judges’ names for elevation to the apex court. If the four judges are elevated without delay, the Supreme Court would reach the full sanctioned strength of 31.

Supreme Court Collegium

- The Collegium System is a system under which appointments/elevation of judges/lawyers to Supreme Court and transfers of judges of High Courts and Apex Court are decided by a forum of the CJI and the four senior-most judges of the Supreme Court.
- Article 124 to 147 in Part V of the Indian Constitution envisages the powers, independence and jurisdiction of the Supreme Court.
- However there is no direct mention of the Collegium either in the original Constitution of India or in successive amendments.
- This system of appointment of judges came into existence after the Third Judges Case which interpreted constitutional articles on October 28, 1998.
- The recommendations of Collegium are binding on the government.

Size of the court

- Initially the Constitution of India provided for a supreme court with a chief justice and 7 judges.
- In the early years, a full bench of the Supreme Court sat together to hear the cases presented before them.
- As the work of the court increased and cases began to accumulate, parliament increased the number of judges(including CJI) from the original 8 in 1950 to 11 in 1956, 14 in 1960, 18 in 1978, 26 in 1986 and 31 in 2009 (current strength).

Home Ministry terminates ‘Black List’ of Indian-origin people

The Home Ministry has decided to discard its ‘Black Lists’ of Indian-origin people.

What is Black List?

- The list mostly is comprised of the names of people belonging to the Sikh Community, who have taken asylum abroad under the plea of alleged persecution in India.
- The list is maintained by Indian missions abroad.
- The Indian-origin people who took asylum abroad under the plea of alleged persecution in India are included in the list.
- Those who are in the Black list are denied visa services by Indian missions and posts.

Implications of the move

- As per Home Ministry officials, all such people presently in the blacklist will be given regular visa as well as Overseas Citizen of India (OCI) cards.
- Indian missions and posts abroad will no longer be required to maintain any such local lists, known as ‘Black lists’.
- All such Persons of Indian Origin (PIOs) and their families who are not in the main adverse list of the government will now be granted a visa and consular services at par with foreigners of that country.
- In another decision, the MHA also delegated the Foreigners Regional Registration Officers (FRROs) to grant permits to foreigners to visit protected and restricted area in the country.
- The state governments along with FRROs will now to be able to grant permits for travel other than tourism in areas that were hitherto restricted areas.

Exceptions

- Some areas in North-Eastern states, J&K, Himachal Pradesh and a few islands in Andaman and Nicobar islands are currently under restricted and protected areas.
- Foreigners are required to take special permissions to visit such places.

Zero Pendency Courts Project

A Delhi High Court’s pilot project report on the backlog of cases has said the Capital needed 43 more judges above the current strength of 143 to clear all the pending cases in one year. The ‘Zero Pendency Courts Project’ is a one-of-its-kind project in India aimed to study the life cycle of cases to come up with optimal timelines for cases.

Zero Pendency Courts Project

- Prompted by the urgent need to ensure timely justice, the Delhi High Court started the pilot project from January 2017 in certain subordinate courts in Delhi.
- It is one of its kind in India aimed to study the life cycles of cases to come up with optimal timelines for cases.
- The primary goal of the project was to study the flow of cases in the absence of backlog.
- The inspiration for the “zero pendency court project” was a remark by Justice M.N. Venkatachalaiah (former Chief Justice of India).

Cost of Pendency

- As recently as in 2016, it was estimated that judicial delays cost India around 1.5% of its Gross Domestic Product annually.
- The report noted that the number of criminal cases in Delhi is far more than the number of civil cases.
- As on March 20, 2019, there were 5.5 lakh criminal cases and 1.8 lakh civil cases pending in subordinate courts in Delhi.
- It said the highest amount of time per hearing on average was spent on the final arguments stage followed by the final order or judgment.
- A considerable amount of time is taken on dictation, researching on case laws etc. before pronouncing the final judgment. Thus, a lot of time is spent on each of the hearings.

Reason for delays

- The reason for delays, the report said was the absence of witnesses.
- Evidence stage forms an important of a case. Absence of witnesses during the evidence stage causes a serious impediment to the progress of the case.

- Also, unnecessary adjournments sought by the advocates or the parties at various stages in a case delay the proceedings, thus prolonging the case life.
- Additionally, there is a delay in the service of summons, especially to outstation parties.

INTERNATIONAL AFFAIRS- BILATERAL, GROUPINGS, ORGANISATIONS

Gulf warning

Tehran's decision to stop adhering to some of the provisions of the landmark 2015 nuclear agreement with the international community is a sharp reminder that dark clouds are gathering again in the Middle East.

Reasons for Tehran's Decision

- When US President Donald Trump pulled out last year from the nuclear deal negotiated by his predecessor, Barack Obama, Iran had the option of walking out too. It did not.
- Tehran had hoped that the European powers as well as Russia and China might help limit the effects of America's renewed hostility.
- The Europeans had criticised the US withdrawal, affirmed that Iran was in compliance with the nuclear agreement, and offered to sustain economic engagement with Iran if Tehran stayed true to the deal. China and Russia had criticised the US decision as unilateral and arbitrary.
- But Iran's hopes of exploiting the cracks among the great powers are looking increasingly unreal as the actions of Europe, China and Russia have not matched their words. Iran's "strategic patience", in the words of President Hassan Rouhani, is wearing thin.

Hostile Actions by USA: Meanwhile, the Trump Administration is ratcheting up pressure on Iran.

- Terming Iran's armed forces as terrorist Organisation –
 - Last month, it designated the Iranian Islamic Revolutionary Guard Corps (IRGC) as a terrorist organisation.
 - This is the first time the US has labeled the entire wing of a country's armed force as "terrorist".
- Dispatching Aircraft towards Gulf
 - Citing an unexplained threat from Iran, President Trump has despatched the USS Abraham Lincoln aircraft carrier strike group towards the Gulf.
- Sanctions impacting Iran -Meanwhile, US sanctions aimed at choking Iran's oil exports and squeezing its finances are beginning to bite.

Tehran's apprehensions

- Tehran has no reason to believe that the Trump Administration is open to a reasonable compromise that might include a revised nuclear deal to address any real US concerns.
- It is no secret in Washington that regime change in Tehran is the Trump Administration's real goal.

Implications of this decision

- Iran's partial withdrawal from the nuclear agreement is aimed at convincing Washington's allies in Europe as well as its competitors that time is running out to save the deal.
- Tehran is conscious of Europe's difficulty in effecting a real break with the US in the Middle East.
- It also knows that China and Russia have their own fish to fry with America and are unlikely to challenge the US on Iran.
- Worse still, Moscow and Beijing could use Tehran as a lever in their bargaining with the US.
- Iran might lack real friends among the major powers, but it has the capacity to bring the house down in the Middle East.
- With armed proxies across the region, Tehran is well placed to launch an asymmetric war against the US and its allies.
- Iran has also threatened to close the Straits of Hormuz — the strategic waterway that moves oil from inside the Gulf to the rest of the world — if its own oil sales remain blocked.

- With neither side ready to step back, the conflict between the US and Iran might well be headed for a costly showdown.

A fraught moment: U.S.-China trade war

The U.S.-China trade war has flared up again after a deceptive lull over the last few months, when both sides were trying to negotiate a deal.

Present Situation

- Out of nowhere, President Donald Trump tweeted that he would raise the 10% tariff imposed on \$200-billion worth of Chinese goods to 25%, starting Friday. That the Trump administration pressed ahead with the increase even as China's Vice Premier Liu He was still in Washington for a second day of talks with U.S. trade officials only underscores the businessman-turned-President's 'take no prisoners' approach to negotiations.
- China promptly promised retaliatory action, but was yet to spell out the measures.
- With Mr. Trump tweeting that "the process has begun to place additional tariffs at 25% on the remaining" Chinese goods worth \$325 billion, the U.S. administration unambiguously signalled it was not going to be the first to blink.

Implications for the global economy

- The increase in tariffs imposed on goods crossing international borders essentially represents a new tax on a global economy already facing a slowdown.
- Last month, the International Monetary Fund trimmed its projection for global growth in 2019 to 3.3%, from a 3.5% forecast made in January, citing slowing momentum in "70% of the world economy".
- IMF Chief Economist Gita Gopinath had at the time projected a pick-up in global growth momentum in the second half, predicated substantially on the "improved" outlook for U.S.-China trade tensions.
- IMF chief Christine Lagarde and Ms. Gopinath, however, presciently warned that the world economy was poised at "a delicate moment".
- Were tensions in trade policy to flare up again, it could result in large disruptions to global supply chains and pose downside risks to global growth, the IMF warned.
- Barely a month later, the world economy faces the very real risk of an escalation in this trade war where other countries, including India, can largely only wait and watch as the U.S. and China raise the pitch.

Implications for American Economy

- While the U.S. may have genuine concerns about Chinese protectionism, the overall economic logic behind Mr. Trump's trade policy still remains weak.
- The cost of these tariffs will, after all, eventually be borne by American consumers and could result in U.S. job losses too as the import of Chinese parts become uneconomical for smaller businesses.

Implications for India: Indian policymakers would do well to closely monitor how the latest escalation in trade tensions pans out for global demand and international energy prices, given that the RBI has flagged oil price volatility as a factor that would have a bearing on India's inflation outlook.

Exercise Group Sail

- Two Indian naval ships joined their counterparts from the US, Japan, and The Philippines for a "Group Sail" exercise through the contested waters of the South China Sea.
- In China, the ships took part in the International Fleet Review (IFR) as part of the 70th anniversary celebrations of the People's Liberation Army (Navy).
- The ships undertook various exercises en route which included formation manoeuvring, under way replenishment runs, cross-deck flying and exchange of sea riders.
- The group sail exercise showcased India's commitment to operating with like-minded nations to ensure safe maritime environment through enhanced interoperability.

Importance of the exercise

- The exercise comes at a time when India has been warily looking at increased Chinese activity in the northern Indian Ocean, traditionally seen as India's backyard.

- The presence of Chinese ships and submarines has been on the rise.
- In 2017, China opened its first overseas military facility in Djibouti and has also been investing heavily in infrastructure along Africa's eastern coast – in Tanzania and Kenya – as part of its ambitious OBOR initiative.
- This move underlined India's commitment to working with partners to ensure safe and open sea lanes.

India re-elected as observer to Arctic Council

The 11th Arctic Council ministerial meeting is being held at Rovaniemi, Finland. India has been re-elected as an observer to intergovernmental forum Arctic Council.

India's interest in Arctic

- Indian researchers have been studying whether there is a co-relation between Indian monsoon and the Arctic region.
- India's National Centre for Polar and Ocean Research, an institute under the Ministry of Earth Sciences, has set up a research station, 'Himadri', in Svalbard in Norway.
- It studies the mass balance of glaciers, the effect of the warming on the marine system, the formation of clouds and precipitation, and the effect on biodiversity.

About Arctic Council

- It is an advisory body that promotes cooperation among member nations and indigenous groups as per the Ottawa Declaration of 1996.
- Its focus is on sustainable development and environmental protection of the Arctic.
- It promotes cooperation, coordination and interaction among Arctic states, the region's indigenous communities and other inhabitants on common issues, particularly on sustainable development and environmental protection.
- The Arctic Council consists of the eight Arctic States: Canada, the Kingdom of Denmark (including Greenland and the Faroe Islands), Finland, Iceland, Norway, Russia, Sweden and the United States.
- India and China are one of the observer countries since 2013.

UK has become the first country to declare a 'climate emergency'

The UK Parliament has passed an extraordinary measure: a national declaration of an Environment and Climate Emergency. The UK is the first national government to declare such an emergency.

Why such move?

- The decision marks a renewed sense of urgency in tackling climate change, following a visit to Parliament by teenage activist Greta Thunberg.
- There are now some 49 million people living under national, city and local declarations of a climate emergency around the world.
- The UK is legally committed to a 80% reduction in carbon emissions by 2050 (relative to their 1990 levels).
- It was recently recognised as one of just 18 developed economies that have driven down carbon dioxide emissions over the last decade.

What is a climate emergency?

- There is no precise definition of what constitutes action to meet such an emergency, the move has been likened to putting the country on a "war footing".
- This has put the climate and the environment at the very centre of all government policy, rather than being on the fringe of political decisions.

INDIAN ECONOMY**Saving BSNL**

The Centre must take immediate steps to revive Bharat Sanchar Nigam Ltd if it wants to achieve the objective of reaching 100 per cent tele-density in rural areas and keep telecom services affordable for the common man.

Need to revive BSNL

- Counter to any monopolistic venture – While private operators have taken over the market with billions of dollars in investments and cost-efficient operations, India's telecom consumers need a public sector entity like BSNL as an effective counter to any monopolistic venture that may arise due to the ongoing financial stress in the sector.
- Less number of players – From as many as nine operators, intense competition and below-cost pricing have reduced the number to just three players.
- The pressure to increase tariffs – The larger surviving operators, who have so far managed to sustain their operations, are under pressure to increase tariffs.
- Fear of shut down of telecom networks – The highly leveraged balance sheets of these operators could also force them to slow down the rollout of next-generation data networks to rural and economically unviable areas.
- Catering rural area – In this context, it is important to have a strong PSU telecom company which will not only prevent private players from increasing tariffs as an easy means to escape financial stress but also ensure that rural consumers are catered to.

Past Efforts to revive PSUs

- There have been many attempts earlier to improve the company's operations, but most of them remain on paper.
- Sam Pitroda's Committee – For example, a committee headed by Sam Pitroda, then advisor to the Prime Minister, offered a 15-point plan to turnaround the PSU, including trimming staff, divesting 30 per cent equity, adopting a managed services model for its various operations and inducting a chief executive from the private sector. This plan has not been acted upon.
- Time is running out, though. BSNL has, in 14 years, moved from Navratna status to being declared as a sick PSU, with cumulative FY2009-18 EBIT losses of ₹82,000 crore.

Step Forward: To prevent any further erosion of value, the Centre must do three things.

- Divestment – First, divest all the real estate land parcels owned by the company and invest the proceeds into buying all the technology BSNL needs to be at par with private players.
- Implement Pitroda committee's proposal – Second, implement the proposals of the Pitroda panel, especially those related to cutting down staff costs and hiving off various businesses into different verticals. EXAMPLE – Here, the Centre can study how British Telecom, once a struggling PSU in the UK, was turned around.
- Autonomy – Finally, remove all political interference and appoint a strong, independent management to run the company.

Conclusion: This will not only secure the future of BSNL, but also ensure that affordable digital services reach every nook and corner of the country.

ENVIRONMENT- CONSERVATION, BIO-DIVERSITY AND ISSUESHow China, followed by India, has led greening efforts across world

A new satellite-based study shows that China and India are leading the increase in “greening efforts” across the world.

The findings of MODIS

- The research team set out to track the total amount of Earth's land area covered by vegetation and how it changed over time (2000-17).
- Through NASA's Moderate Resolution Imaging Spectroradiometer (MODIS) data, the team found that the global green leaf area has increased by 5% since the early 2000s.
- This translates to a net increase in leaf area of 2.3% per decade, which is equivalent to adding 5.4×10^6 sq km new leaf area over the 18-year period of the record (2000 to 2017).
- This is equivalent to the area of the Amazon.
- China alone accounts for 25% of the global net increase in leaf area. India has contributed a further 6.8%.
- The greening in China is from forests (42%) and croplands (32%) but in India is mostly from croplands (82%) with minor contribution from forests (4.4%).

What is MODIS?

- MODIS is a key instrument aboard the Terra and Aqua satellites of NASA.
- With its low spatial resolution but high temporal resolution, MODIS data is useful to track changes in the landscape over time
- MODIS is playing a vital role in the development of validated, global, interactive Earth system models able to predict global change accurately enough to assist policy makers in making sound decisions concerning the protection of our environment.
- Its data helps improve our understanding of global dynamics and processes occurring on the land, in the oceans, and in the lower atmosphere.

Highlights of the study

- The study was entirely based on satellite data with access to forest inventory data.
- There were no physical checks carried out in either China or India to assess what kind of trees or vegetation was preferred.
- The quality of trees is good in view of leaf abundance.
- Satellite data do not have the ability to accurately recognise the species at the global scale.
- When the greening of the Earth was first observed, it was thought due to a warmer, wetter climate and fertilization from the added carbon dioxide in the atmosphere, leading to more leaf growth in northern forests, for instance.
- Now, with the MODIS data that lets us understand the phenomenon at really small scales, we see that humans are also contributing.

India's growth

- With only 2.7% of the global vegetated area, India accounts for 6.8% of the global net increase in leaf area.
- It is as expected because most of the land cover type in India is cropland (2.11×10^6 sq km).
- Total cereal production in India increased by 26% during the same period.
- There are only a few forests in India, and that is why their contribution is small.
- Data show that since Independence, a fifth of India's land has consistently been under forests.
- The Forest Survey of India's State of Forest Report 2017 had recorded that forest cover had increased by 6,600 sq km or 0.21% since 2015.

One million species face extinction: Why biodiversity report matters

Among the findings that are making global headlines is the assessment that as many as 1 million different species, out of a total of an estimated 8 million plant and animal species, are facing the threat of extinction, more than at any previous time, because of changes brought about in natural environments by human activities.

What is IPBES?

- IPBES is a global scientific body very similar in composition and functioning to the better-known Intergovernmental Panel on Climate Change (IPCC) that makes periodic reviews of scientific literature to make projections about the earth's future climate.
- IPBES is mandated to do a similar job for natural ecosystems and biodiversity. Formed in 2012, this is the first global assessment report by the IPBES .
- Like IPCC, IPBES does not produce any new science, it only evaluates existing scientific knowledge to make assessments and projections.

Findings of the report

- Among the findings that are making global headlines is the assessment that as many as 1 million different species, out of a total of an estimated 8 million plant and animal species, are facing the threat of extinction, more than at any previous time, because of changes brought about in natural environments by human activities.
- The report says that 75% of Earth's land surface and 66% marine environments have been "significantly altered", and that "over 85%" of wetland area had been lost.

Implications of findings of the report

- The two UN Conventions — Convention on Biological Diversity that addresses biodiversity issues, and the Convention on Combating Desertification that deals with sustainable land management — are likely to be guided by this report in future.
- It is possible that so would be a host of other international agreements and processes, like the Ramsar Convention on wetlands, the Convention on International Trade in Endangered Species, or the Cartagena Protocol on Biosafety.

Indian Connection

- The report does not have country-specific information.
- But as a major biodiversity hotspot, vast areas, especially the coastline, of which are under tremendous stress due to large population, India can identify with most of the trends pointed out in the report.
- For example, it says 23% of global land area had shown a reduction in productivity due to degradation, and that between 100 to 300 million people were at an increased risk of floods and hurricanes because of loss of coastal habitats and protection.
- It says plastic pollution had increased 10 times from 1980, the number of large dams (those with a height of 15 m or more) had reached almost 50,000, and that human population had more than doubled since 1970s, and the number of urban areas had doubled since 1992.

Conclusion: All these trends have been clearly visible in the case of India, and bring with them the associated risks to natural ecosystems highlighted in the report.

Purple frog set to be crowned Kerala's state amphibian

There is an ongoing campaign in Kerala to declare 'Maveli', the purple frog as Kerala's State Amphibian, making it first of its kind in India.

Roots in mythology

- Mahabali, or Maveli, was a benevolent asura king who ruled over the region of Kerala but was banished into the netherworld by Lord Vishnu in order to appease the gods.
- But Maveli was granted one wish: he could return to Kerala for a single day and meet his subjects.
- This day in Kerala came to be celebrated as 'Thiruvonam', the most auspicious day of Onam when people would greet their old king.

Purple Frog

- Quite similar to the lore of King Maveli, researchers have found that the Purple frog (*Nasikabatrachus sahyadrensis*), which lives almost its entire life in underground tunnels, comes out to the surface for a single day in a year to breed.
- Once it lays its eggs, the bloated frogs characterized by a protruding snout and powerful hind legs return to the earth's deepest layers.
- This intriguing frog species is listed as Endangered on the red list of the International Union for Conservation of Nature (IUCN).
- It feeds mostly on soil-mites, ants and termites using its fluted tongue.
- The male and female frogs mate underground and once in a year, they come out on the surface to lay thousands of eggs near seasonal streams in the months of May-June.
- How they time their emergence onto the surface along with the onset of early rains is a mystery that continues to baffle naturalists.

**SCIENCE AND TECHNOLOGY- EVERYDAY SCIENCE, SPACE, NUCLEAR, DEFENCE
ETC****Indian scientists discover how serotonin helps brain cells cope with stress**

Indian scientists have discovered that serotonin boosts energy production in brain cells and helps them survive under stress. This new knowledge can potentially be used to develop anti-stress drugs in future.

Role of Serotonin

- Serotonin is a chemical that relays information from one part of the brain to another and is known to play a key role in a number of functions ranging from sleep to social behaviour.
- The study by scientists at the Mumbai-based Tata Institute of Fundamental Research (TIFR) has found that the neurotransmitter boosts the number of mitochondria in brain cells.
- Mitochondria in brain cells generate energy to carry out cellular functions and play a role in survival of brain cells under stress.
- In addition, serotonin also increases production of energy by mitochondria.
- This role of serotonin in regulating neuronal energetics was not known till now.

Benefits of Serotonin

- Serotonin reduces toxic reactive oxygen species in neurons, boosts anti-oxidant enzymes and buffers neurons from the damaging effects of cellular stress.
- The study has uncovered an unprecedented role of serotonin in energy production in neurons, directly impacting how neurons handle stress.
- It has also identified novel therapeutic targets for the treatment of neurodegenerative and psychiatric disorders.

Energy boosting function

- Researchers have also found out the mechanism through which serotonin carries out its energy boosting function.
- It has emerged that generation of new mitochondria in neurons by serotonin is accompanied by increased cellular respiration and energy chemical ATP.
- These effects of serotonin involve the serotonin2A receptor and master regulators of mitochondrial generation – SIRT1 and PGC-1a.

DEFENCE**IAF gets first Apache Guardian attack helicopter**

US aerospace major Boeing has handed over first of the 22 Apache Guardian attack helicopters to the Indian Air Force today. The addition of AH-64E (I) Apache helicopter is a significant step towards modernization of the force's chopper fleet.

AH-64E Apache

- The AH-64E Apache is a leading multi-role attack helicopter and is flown by the US Army.
- The helicopter has been customised to suit the IAF's future requirements and would have significant capability in mountainous terrain.
- It has the capability to carry out precision attacks at standoff ranges and operate in hostile airspace with threats from ground.
- Its ability to transmit and receive the battlefield picture, to and from the weapon systems through data networking makes it a lethal acquisition.

QUOTE OF THE DAY

Don't let yesterday take up too much of today