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(Recent Issues)



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Environment & Conservation (Recent issues)

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1. Anthropause

There were pumas sighted in Chile's Santiago, jackals within the parks of Tel Aviv in Israel, dolphins within the waters of Italy and even a monkey fight on the streets of Thailand.

- Researchers have suggested the lockdown period, which is additionally being mentioned because the "Great Pause", be mentioned with a more precise term.
- It is referred specifically to a substantial global slowing of recent human activities, notably travel.
- The unprecedented curbs imposed on many people round the world, mainly thanks to restrictions in travel, led to reports of bizarre animal behaviour.

2. Orchids of India by the Botanical Survey of India.

- It is that the first comprehensive census of orchids of India.
- **Key highlights:**
 - ✓ The 1,256 species or taxa of orchids belong are found in India.
 - ✓ 388 species of orchids are endemic to India of which about one-third (128) endemic species are found in Western Ghats.
 - ✓ The publication also contains photographs of 775 species.
 - ✓ While north-east India rank at the highest in species concentration, the Western Ghats have high endemism of orchids.
 - ✓ The highest number of orchid species is recorded from Arunachal Pradesh with 612 species, followed by Sikkim 560 species and West Bengal.
 - ✓ Among the ten bio geographic zones of India, the Himalayan zone is that the richest in terms of orchid species followed by Northeast, Western Ghats, Deccan plateau and Andaman & Nicobar Islands.

Orchids are often broadly categorised into three life forms:

1. epiphytic (plants growing on another plants including those growing on rock boulders and sometimes termed lithophyte).
2. terrestrial (plants growing ashore and climbers).
3. mycoheterotrophic (plants which derive nutrients from mycorrhizal fungi that are attached to the roots of a vascular plant).

3. Blue flag certificate

The eight beaches are Gujarat's Shivrajpur, Ghoghla in Daman and Diu, Kasarkod and Padubidri in Karnataka, Kerala's Kappad, Andhra Pradesh's Rushikonda, Odisha's Golden beach and Andaman and Nicobar's Radhanagar beach.

What is blue flag Certification?

- 'Blue Flag' is a world certification of environmental properties and cleanliness on beaches.
- A 'Blue Flag' beach provides hygienic and clean bathing water, basic infrastructure to tourists and sustainable development within the area.
- Foundation for Environmental Education (FEE) runs the Iris versicolor program across the planet .
- This idea was started in France in 1985 while Europe adopted the 'Blue Flag' program in 1987. However, South Africa was the primary outside European country that joined the program in 2001.
- Spain has the most important number of 566 Iris versicolor beaches while Greece and France have 515 and 395 such Iris versicolor beaches respectively.
- Chandrabhaga beach located on the Konark coast of Odisha is that the first beach within the country to receive 'Blue Flag Certification'.

4. BIOFUELS

The Government has allowed the direct sale of biodiesel (B100) for blending with high speed diesel to all or any consumers, in accordance with the required blending limits and therefore the standards specified by the Bureau of Indian Standards, with effect from 29th June, 2017.

The National Policy on Biofuels-2018 approved by the govt envisages an indicative target of 20% blending of ethanol in petrol and 5% blending of bio-diesel in diesel by 2030.

Generations of Bio fuels-

The Policy categorises biofuels as “Basic Biofuels” viz.

- First Generation (1G) bioethanol & biodiesel and “Advanced Biofuels” –
- Second Generation (2G) ethanol, Municipal Solid Waste (MSW) to dropin fuels,
- Third Generation (3G) biofuels, bio-CNG etc. to enable extension of appropriate financial and monetary incentives under each category.

5. EL- Nino and pollution

Researchers from China and therefore the U.S. are successful in predicting pollution levels in northern Indian States.

The model they need developed shows 75% accuracy in predicting pollution levels, and therefore the prediction are often done even a season beforehand.

Key findings:

- El Niño occasions tend to finish in lowered wind speeds within the world , which prevented airborne pollutants from moving out of densely populated areas.
- Antarctic Oscillation occasions create stronger winds in some components of northern India and weaken them in others, leading to uneven impacts on pollution levels.

6. Mussoorie Resolution

What was the Mussoorie Resolution?

Conclave of the Himalayan States held in Mussoorie recently passed the Mussoorie Resolution.

Demands of the Himalayan States

One-day Himalayan conclave was held in Mussoorie in July 2019 during which for the primary time the Himalayan states have come on one platform to require a unanimous stand on certain issues. The 11 Himalayan states are: Jammu and Kashmir, Uttarakhand, Himachal Pradesh, Sikkim, Arunachal Pradesh, Meghalaya, Nagalaland, Tripura, Mizoram, Manipur and Assam.

What are their demands?

1. A separate Union ministry to affect problems endemic to them
2. A green bonus in recognition of their contribution to environment conservation.

Why green bonus?

1. Most of the country's rivers originate within the Himalayas and thus the states need to play the foremost significant role within the prime minister's conservation initiative.
2. Himalayan states' contribution to environmental conservation was the most important with their green cover.
3. The states were also at an obstacle because large swathes of land fell into eco-sensitive zones where all kinds of development activities couldn't be administered

7. Draft Environmental and Social Management Framework (ESMF)

What is draft Environmental and Social Management Framework (ESMF)?

The draft Environmental and Social Management Framework (ESMF), a part of a World Bank-funded project, lays down guidelines for coastal States to adopt once they approve and regulate projects in coastal zones.

Why is it being brought in?

The project aims at enhancing coastal resource efficiency and resilience, by building collective capacity (including communities and decentralised governance) for adopting and implementing integrated coastal management approaches.

What are the proposed activities?

The key activities proposed for coastal zone development that contains investments by States include:

1. Mangrove afforestation/shelter beds,
2. Habitat conservation activities like restoration of sea-grass meadows, eco-restoration of sacred groves, development of hatcheries, rearing/rescue centres for turtles and other marine animals,
3. Creation of infrastructure for tourism,
4. Restoration and recharge of water bodies,
5. Beach cleaning and development, and
6. Other small infrastructure facilities.

8. Samagra Shiksha-Jal Suraksha

Samagra Shiksha-Jal Suraksha drive was initiated by the Department of faculty Education and Literacy under the HRD Ministry to market awareness about conservation activities among school students within the country in order that they will become more committed, conscientious and competent citizens.

Samagra Shiksha-Jal Suraksha drive: 5 Key Objectives

- To educate students about conservation of water.
- To sensitize students about the impact of water.
- To empower students to guard the natural sources of water.
- To enable each student to save lots of a minimum of one litre of water per day.
- To help students find out how to use water judiciously and ensure minimum wastage of water at both home and faculty.

9. STUBBLE BURNING

In news: Pollution in Delhi has hit record-breaking levels and stubble burning may be a major contributor.

What is stubble burning?

Stubble burning is intentionally setting fire to the straw stubble that is still after grains, like paddy, wheat are harvested. Unlike manual harvesting techniques however, combine harvesters leave behind rice stubble.

It is practised in Punjab, Haryana and Uttar Pradesh to clear the fields for the sowing of Rabi Crop from the last week of September to November. there's only a two to 3 weeks' time window between the harvesting of paddy crop and therefore the sowing of subsequent crop.

Burning crop residue may be a crime under Section 188 of the IPC and under the Air and Pollution Control Act of 1981. On December 10, 2015, the National Green Tribunal (NGT) had banned crop residue burning within the states of Rajasthan, Uttar Pradesh, Haryana and Punjab where the practice is prevalent.

Why it's bad ?

- Stubble burning makes both the soil and air poisonous.
- Microorganisms present within the upper layer of the soil also as its organic quality gets affected.
- Due to the loss of 'friendly' pests, the wrath of 'enemy' pests has increased and as a result, crops are more susceptible to disease.

How stubble burning cause air pollution?

1. Stubble burning, leads to emission of harmful gases like carbon monoxide gas , N₂O, NO₂, SO₂, CH₄ along side particulate and hydrocarbons. Each tonne of crop residue on burning releases around 3kg of particulate , 60 kg of CO, 1,460 kg of CO₂, 199kg of ash and 2kg of SO₂.
2. Also, Crop residue fires in Punjab and Haryana are enhancing concentrations of toxic gases like benzene and toluene, consistent with research from Indian Institute of Science Education and Research (IISER).
3. Further, Stubble burning releases toxic pollutants like Volatile organic compound (VOC) in air. Also, it results in spike in particulate levels, contributing between 12 and 60% of PM concentrations.
4. Clouds of ash and smoke containing these harmful pollutants from stubble burning travel quite 1000 kms aided by the Westerly winds coming from the Mediterranean region and make an obstinate and non-clearing clouds.
5. Smog formed of the smoke increase the amount of pollutants by manifolds within the air resulting in poor visibility and causing accidents.

10. Global assessment of forest biodiversity by World Wide Fund for Nature (WWF)

World Wide Fund for Nature (WWF) has released the first-ever global assessment of forest biodiversity.

About the news:

- The new findings were supported the Forest Specialist Index, developed following the Living Planet Index methodology — an index that tracks wildlife that lives only in forests.
- There has been a 53 per cent decline within the number of forest wildlife populations since 1970.
- Of the 455 monitored populations of forest specialists, quite half declined at an annual rate of 1.7 per cent, on the average between 1970 and 2014.
- While the decline was consistent in these years among mammals, reptiles and amphibians (particularly from the tropical forests), it had been less among birds (especially from temperate forests).

Major threats liable for the decline in wildlife populations:

- Habitat loss and habitat degradation/change
- Exploitation
- Climate change
- Loss of habitat thanks to logging, agricultural expansion, mining, hunting, conflicts and spread of diseases accounted for nearly 60 per cent of threats.
- Nearly 20 per cent of threats were thanks to overexploitation. Of the 112 forest-dwelling primate populations, 40 were threatened by overexploitation (hunting).
- Climate change, on the opposite hand, threatened to 43 per cent of amphibian populations, 37 per cent of reptile populations, 21 per cent of bird populations but only 3 per cent of mammal populations.
- More than 60 per cent of threatened forest specialist populations faced quite one threat.

11. Single use plastics

Prime Minister of India announced that India would end single-use plastic by 2022.

What is single use plastic? and examples

According to UNEP Single-use plastics, often also mentioned as disposable plastics, are commonly used for plastic packaging and include items intended to be used just one occasion before they're thrown away or recycled. These include, among other items, grocery bags, food packaging, bottles, straws, containers, cups and cutlery.

12. National Resource Efficiency Policy (NREP)

About the Policy

- It aims to double the recycling rate of key materials to 50% within the next five years and enable upcycling of waste.
- The agenda is to develop a circular economy.
- This are often achieved by two measures—
 1. by recycling the materials, and
 2. by increasing the efficiency of use of those resources.
- The draft has proposed significant policy instruments like addressing regulatory gaps in implementation of waste laws, landfill taxes, high tipping fees especially for bulk generators of waste, etc.

Objective: The Policy seeks to enable efficient use of natural resources and promote up-cycling of wastes across all sectors of the economy. It aims to realize India's commitments under the UN Sustainable Development Goals by 2030.

13. UNCCD COP 14

India is that the COP president for 2019 – 2021.

UNCCD and India

India ratified the Convention to Combat Desertification in December 1996.

- The nodal ministry for the convention in India is that the Ministry of Environment, Forest and global climate change .
- India faces an enormous desertification problem. A 2016 ISRO report stated that 29% of the land in India was degraded.
- The 14th Conference of Parties (COP) to the UNCCD was held in India in 2019.
- The conference which was held in Greater Noida had the theme, "Restore Land, Sustain Future".
- India is that the COP president for 2019 – 2021.
- India is additionally a neighborhood of the Bonn Challenge, which is a world effort to bring 150 million hectares of the world's degraded and deforested land into restoration by 2020, and 350 million hectares by 2030.

14. SARDAR SAROVAR DAM

Sardar Sarovar project- key facts:

- haunted after the Narmada Water Disputes Tribunal gave its final award vis-à-vis Gujarat-Madhya Pradesh in 1979.
- Second biggest dam in terms of volume of concrete utilized in it.

- Third highest concrete dam in India.
- Power generated from the dam would be shared among three states — Madhya Pradesh, Maharashtra and Gujarat.

Various issues present:

- Compensation amounts.
- Formation of islands thanks to submergence.
- Inadequate number of plots and rehabilitation sites.
- Leveling of land for house construction.
- Action on people involved in fake registry of land for homes.
- Rights for the fishing community on the reservoir.
- Cases of oustees settled in Gujarat.
- problems with farmers who have lost land for rehabilitation sites.

15. Basel Ban amendment becomes law

- The 1995 Basel Ban Amendment, a worldwide waste dumping prohibition, has become a world law after Croatia ratified it on September 6, 2019.

Basel Convention against global waste dumping

- Basel Convention in 1995, to guard human health and therefore the environment against the adverse effects of hazardous wastes, consistent with Basel Action Network (BAN).
- BAN may be a United States-based charity organisation and is one of the organisations and countries, which created the Basel Ban Amendment — hailed as a landmark agreement for global environmental justice.
- The Ban Amendment was originally adopted as a choice of the second meeting of the Conference of the Parties in March 1994.
- The Ban Amendment prohibits all export of hazardous wastes, including electronic wastes and obsolete ships from 29 wealthiest countries of the OECD to non-OECD countries.
- The Ban Amendment had been stalled for of these years thanks to uncertainty over the way to interpret the Convention.

16. India Cooling Action Plan**India Cooling Action Plan:**

- The minister highlighted the very fact that India became one among the primary countries within the world to launch a comprehensive Cooling Action plan in March, 2019, which features a long-term vision to deal with the cooling requirement across sectors like residential and commercial buildings, cold-chain, refrigeration, transport and industries.
- The India Cooling Action Plan (ICAP) lists out actions which may help reduce the cooling demand, which can also help in reducing both direct and indirect emissions.
- The India Cooling Action seeks to:
 - ✓ Reduce cooling demand across sectors by 20% to 25% by 2037-38
 - ✓ Reduce refrigerant demand by 25% to 30% by 2037-38
 - ✓ Reduce cooling energy requirements by 25% to 40% by 2037-38
 - ✓ Recognize “cooling and related areas” as a thrust area of research under national S&T Programme.
 - ✓ Training and certification of 100,000 servicing sector technicians by 2022-23, synergizing with Skill India Mission.

The broad objectives of the India Cooling Action Plan include:

- Assessment of cooling requirements across sectors in next 20 years and therefore the associated refrigerant demand and energy use.
- Map the technologies available to cater the cooling requirement including passive interventions, refrigerant based technologies and alternative technologies like not-in-kind technologies. Suggest interventions in each sector to supply for sustainable cooling and thermal comfort for all.
- Specialise in skilling of RAC service technicians.
- Develop an R&D innovation ecosystem for indigenous development of other technologies.

17. Nilgiris and SHOLA Grasslands

Invasive species may soon wipe out Shola vegetation from Nilgiris: Report Alarming expansion of exotic and tea plantations threaten native dry deciduous, moist deciduous and thorn forests and grasslands there

Shola Forests

- The Shola forests of South India derive their name from the Tamil word solai, which suggests a 'tropical rain forest'.
- Classified as 'Southern Montane Wet Temperate Forest' the Sholas are found within the upper reaches of the Nilgiris, Anamalais, Palni hills, Kalakadu, Mundanthurai and Kanyakumari within the states of Tamil Nadu and Kerala.
- These forests are found sheltered in valleys with sufficient moisture and proper drainage, at an altitude of quite 1,500 metres.

Threats to Sholas

- Unfortunately, the Sholas have begun to gradually shrink thanks to the introduction of alien plant species and annual fire occurrences.
- Alien species like Sticky Snakeroot, Gorse and common broom introduced during British rule, have encroached upon the grasslands.
- During 1840, tree species like Acacia and Eucalyptus were introduced from Australia.
- Afterwards, between 1886 and 1891, Pine and Cypress were introduced, again from Australia. because the alien species grew, the forests and grasslands gradually became degraded and shrank.
- In addition, unscientific agricultural practices like growing tea on the slopes, cattle grazing and fuel wood collection became serious causes for degradation.
- Unregulated tourism has created concrete jungles, traffic jam and caused the generation of garbage.

18. Forest-PLUS 2.0

- Recently, India's Ministry of Environment, Forest and climate change (MoEF&CC) together with the US Agency for International Development (USAID) launched the Forest-PLUS 2.0 programme.
- It is that the second set of pilot projects, is supposed to reinforce sustainable forest landscape management after Forest-PLUS completed its five years in 2017.

Target Area for Forest-Plus 2.0

- It comprises pilot program in three landscapes — Gaya in Bihar, Thiruvananthapuram in Kerala and Medak in Telangana.
- The choice of those sites was driven by the contrast in their landscapes – Bihar may be a forest deficit area, Telangana may be a relatively drier area where there's ample scope for community livelihood enhancement and Kerala is rich in biodiversity.

Targets to be achieved

- 1,20,000 hectares of land under improved management
- New, inclusive economic activity worth \$12 million
- Measurable benefits accrued to 800,000 households
- Three incentive mechanisms(Strategy, Capacity and Support) demonstrated in managing landscapes for ecosystem services

19. IPCC Report on the Ocean and Cryosphere - UNFCCC Meet

What is the report on?

The report is entitled the 'Special Report on the Ocean and Cryosphere during a Changing Climate'.

It highlights the changes happening in oceans, glaciers and ice-deposits ashore and sea.

It was prepared following an IPCC Panel decision in 2016 to organize three Special Reports.

The above report follows the Special Reports on heating of 1.5°C (SR1.5), and on global climate change and Land (SRCCL).

The 1.5°C report was a key input utilized in negotiations at Katowice, Poland in 2018.

Countries relied thereon to commit themselves to capping global temperature rise to 1.5°C by the top of the century.

Key findings of the report:

- The global mean water level had risen by 16 cm between 1902 and 2015, which the speed of increase had doubled within the last one decade.
- The sea levels were rising thanks to thermal expansion of ocean waters thanks to rising temperatures also as due to melting of glaciers and polar ice.
- Between 2006 and 2015, the Greenland ice sheet lost ice-mass at a mean rate of 278 billion tonnes per annum , while the Antarctic ice sheet lost a mass of 155 billion tonnes on a mean per annum .
- Snow over areas outside of those two regions, just like the glaciers within the Himalayas, together lost a mean of 220 billion tonnes of ice per annum .

20. MOSAiC Expedition

- Vishnu Nandan, a 32-year-old polar researcher from Kerala, are going to be the sole Indian among 300 scientists from across the planet aboard the MOSAiC expedition.

The MOSAiC mission was started in September 2019 to review the impact of global climate change on the Arctic region and its impact on the remainder of the planet . the complete sort of MOSAiC is 'Multidisciplinary drifting Observatory for the Study of Arctic Climate'.

Features of MOSAiC Mission

The MOSAiC Mission started in September 2019 when the German research icebreaker Polarstern will depart from Tromsø, Norway. After reaching the destination the icebreaker and its scientists will spend subsequent year drifting through the Arctic Ocean .

A total of 600 people from 17 countries, who also will send their aircrafts and icebreakers for this expedition mission; are participating within the arctic mission.

The researcher will subsequently analyse the gathered data to review the impacts of global climate change |temperature change"> global climate change within the region and these data also will be wont to know the climate change pattern of the remainder of the planet .

Significance

- The results of MOSAiC mission will contribute to reinforce understanding of the regional and global consequences of Arctic global climate change .

- It are going to be helpful in understanding the explanations behind the sea-ice loss and improve weather and climate predictions.
- Its expeditions will support safer maritime and offshore operations, increase coastal-community resilience, contribute to an improved scientific basis for future traffic along northern sea routes.

21. Green crackers

- Green crackers are those crackers which don't contain harmful chemicals that might cause pollution.
- They are environmentally friendly and fewer harmful as compared to standard firecrackers and fewer pollution emission will end in reduced pollution .
- In it commonly used polluting chemicals like aluminium, barium, potassium nitrate and carbon have either been removed or sharply reduced to bog down the emissions by 15 to 30%.
- CSIR have developed Less Polluting Firecrackers which aren't only environment friendly but 15-20 less expensive than the traditional ones.

22. Green wall of India

India is reportedly getting to undertake a huge reforestation exercise along the Aravalli hill range that stretches from the Ridge of Delhi to Banaskantha in Gujarat.

1. It'll be a 1,400km long and 5km wide green belt from Gujarat to the Delhi-Haryana border, on the lines of the "Great Green Wall" running through the width of Africa, from Dakar (Senegal) to Djibouti, to combat global climate change and desertification. If approved, this might end up to be a legacy programme in India's efforts to affect land degradation and therefore the eastward march of the Thar desert.
2. India seeks replicate the thought as a national priority under its goal to revive 26 million hectares of degraded land by 2030.
3. The green belt might not be contiguous, but would roughly cover the whole degraded Aravali range through a huge afforestation exercise.

23. Definition of Forest

Clarifications given by the Forest Advisory Committee (FAC) of the Environment Ministry:

States needn't take the Centre's approval to define what constitutes unclassified land as forest.

How may be a forest defined?

The freedom to define land, not already classified as forests by the Centre or State records, as forest has been the prerogative of the States since 1996 and stems from a Supreme writ , called the Godavarman judgment.

- The Supreme Court judgment expanded the definition of forest to incorporate lands that were already notified by the Centre as forests, that appear in government records as forests also as people who fell within the "dictionary definition" of forest.
- The latter clause allows the States to evolve their own criteria and define tracts of land as forest, and these would then be bound by forest conservation laws.

Why it's difficult to possess an all-encompassing definition of forest?

An all-encompassing definition of forest is difficult for India because the country has 16 different sorts of forest.

24. Colombo Declaration

- Aim: to halve the nitrogen waste by 2030.

Colombo Declaration:

- The Colombo Declaration was developed with the support of the International Nitrogen Management System (INMS), a joint activity of the UN Environment Programme and therefore the 'International Nitrogen Initiative' supported by the worldwide Environment Facility.
- As a part of the Declaration, environment ministers and officials endorsed UN plans for a campaign on sustainable nitrogen management called 'Nitrogen for Life'.
- The Declaration calls upon UN agencies, other international organizations, development partners, philanthropic agencies, academic and civil society organizations to support its implementation.
- It also urges countries to conduct a comprehensive assessment on nitrogen cycling covering policy, implementation, regulation, and scientific aspects at a national level plus sensitize the citizens to know the natural organic process and the way human impacts alter its balance.

25. GRAP**What is GRAP?**

- The action plan which was formulated in 2016 and notified in 2017 has been in effect for 2 years in Delhi and therefore the national capital Region (NCR).
- The plan was formulated after several meetings were held by Environment Pollution (Prevention and Control) Authority (EPCA) with government representatives and experts.
- These are institutionalized measures to be taken when air quality deteriorates, hence works only as an emergency measure.
- When the air quality shifts from poor to very poor, the measures listed need to be followed since the plan is incremental in nature.
- If air quality reaches the severe+ stage, GRAP talks about shutting down schools and implementing the odd-even road-space rationing scheme.
- The plan requires action and coordination among 13 different agencies in Delhi, Uttar Pradesh, Haryana and Rajasthan (NCR areas).
- At the top of the table is that the EPCA, mandated by the Supreme Court.

26. WASTELANDS ATLAS – 2019**The Union Minister for Agriculture released the Wastelands Atlas – 2019.**

- Wastelands are a barren and uncultivated land lying unproductive or which isn't being utilized to its potential.
 - ✓ It includes degraded forests, overgrazed pastures, drought-struck pastures, eroded valleys, hilly slopes, waterlogged marshy lands, barren land, etc.
- These commons also act as a buffer against floods, droughts and pollution for a wider population.

Key highlights-

- This Wastelands Atlas-2019 provides district and state wise distribution of various categories of wastelands area. The changes in wastelands between 2008-09 and 2015-16 are presented within the Atlas.
- The effort has resulted in estimating the spatial extent of wastelands for entire country to the tune of 55.76 Mha (16.96% of the geographic area of the Country i.e. 328.72 Mha) for the year 2015-16 as compared to 56.60 Mha (17.21%) within the year 2008-09.
- During this era 1.45 Mha of wastelands are converted into non wastelands categories.

- There may be a net conversion of 0.84 Mha (0.26%) of various wasteland categories within the country during 2008-09 to 2015-16.
- A reduction in wasteland area was observed within the categories of land with dense scrub, waterlogged and marshy land, sandy areas, degraded pastures / pasture and gullied and / or ravinous land.
- The wastelands have undergone positive change within the states of Rajasthan (0.48 Mha), Bihar (0.11 Mha), Uttar Pradesh (0.10 Mha), Andhra Pradesh (0.08 Mha), Mizoram (0.057 Mha), Madhya Pradesh (0.039 Mha), Jammu & Kashmir (0.038 Mha) and West Bengal (0.032 Mha).
- Majority of wastelands are become categories of 'croplands' (0.64 Mha), 'forest-dense / open' (0.28 Mha), 'forest plantation' (0.029 Mha), 'plantation' (0.057 Mha) and 'industrial area' (0.035 Mha) etc.

27. Water Quality Report

A report ranking major cities on the idea of quality of water was recently released by the Bureau of Indian Standards (BIS).

- Under its flagship Jal Jeevan Mission, the Centre aims to supply safe piped water to all or any households by 2024.
- However, the study, conducted by the BIS for the Union Food and Consumer Affairs Ministry, showed that even in urban areas, which are connected to the piped water network, there's no guarantee that the water is safe for consumption.

What is the present state of water quality?

- Going by the matrix of tests administered by the Bureau of Indian Standards for the Ministry, Delhi has abysmal water quality.
- Chennai and Kolkata rank very low during this regard.
- Mumbai is that the only city with acceptable results.
- City water systems are normatively required to suits the national standard for beverage .
- However, most of the town systems don't feel the compulsion to suits the wants .

28. Avian Botulism and Sambhar lake

Context: Avian botulism is claimed to be the rationale behind the deaths of 18,000 birds in and around Rajasthan's Sambhar lake.

- The avian botulism may be a neuro-muscular illness caused by Botulinum (natural toxin) that's produced by a bacteria — botulinus .
- The bacteria is usually found within the soil, rivers, and seawater. It affects both humans and animals.
- The bacteria also need anaerobic (absence of oxygen) conditions and don't grow in acidic conditions.
- It affects the system nervous of birds, resulting in paralysis in their legs and wings.
- The outbreaks of avian botulism tend to occur when average temperatures are above 21 degrees Celsius, and through droughts.

29. Ken Betwa Interlink Project

Ken Betwa Interlink Project

- The Ken-Betwa Link Project (KBLP) is that the River interlinking project aims to transfer surplus water from the Ken river in MP to Betwa in UP to irrigate the drought-prone Bundelkhand region

spread across the districts of two states mainly Jhansi, Banda, Lalitpur and Mahoba districts of UP and Tikamgarh, Panna and Chhatarpur districts of MP.

- Ken-Betwa is one among the 30 river inter linking projects conceived across the country.
- Ken and Betwa rivers originate in MP and are the tributaries of Yamuna.
- Ken meets with Yamuna in Banda district of UP and with Betwa in Hamirpur district of UP.
- Rajghat, Paricha and Matatila dams are over Betwa River.
- Ken River passes through Panna tiger reserve.
- The project has been delayed thanks to political and environmental issues.

30. Torre faction technology

India, Sweden launch pilot program to tackle stubble burning.

What Is Torrefaction?

- Biomass torrefaction may be a thermal process used to produce high-grade solid biofuels from various streams of woody biomass or agro residues.
- The outcome may be a stable, homogeneous, top quality solid biofuel with far greater energy density and calorific value than the first feedstock, providing significant benefits in logistics, handling and storage, also as opening up a good range of potential uses.

How it Functions?

- Biomass torrefaction involves heating the biomass to temperatures between 250 and 300 degrees Celsius during a low-oxygen atmosphere.
- When biomass is heated at such temperatures, the moisture evaporates and various low-calorific components (volatiles) contained within the biomass are driven out.
- During this process the Hemi-Cellulose within the biomass decomposes, which transforms the biomass from a fibrous low-quality fuel into a product with excellent fuel characteristics.
- To make a biomass torrefaction plant economically viable it's crucial to use the energy "lost" within the volatiles. This will be done by burning the volatiles (torgas) during a lean gas combustor. This combustor can provide the warmth for the drying and torrefaction also.
- The Torrefied pellets become a perfect coal replacement due to its following features:
 - Grinds & burns like coal – Existing Infrastructure are often used
 - Lower Feedstock Costs
 - Lower shipping and Transport Costs
 - Minimal de-rating of the facility Plant
 - Provides Non-Intermittent Renewable Energy
 - Lower sulphur and Ash Content (compared with coal)

31. Global Climate Risk Index 2020

Global Climate Risk Index 2020: Among the highest ten most affected countries, India, Germany and Japan suffered from extended periods of heat wave during 2018.

Concerns for India:

- 10% of India's wildlife is threatened with extinction.
- Agricultural bio-diversity has seen significant decline, in some regions the loss is severe, with loss of around 90% of the bio-diversity.

- Around half the available water bodies are heavily polluted and that they are neither potable nor are often used for agricultural purposes.
- More than 2/3rd of the land has been degraded to the extent of sub-optimal productivity.
- The pollution is growing, with more cities facing higher levels of pollution.
- Electronic and chemical wastes that are produced are far against our capacity to recycle or maybe manage.

Global Climate Risk Index 2020: Key Highlights

- Japan, the Philippines and Germany were found to be the foremost climate-affected countries in 2018 followed by Madagascar, India and Sri Lanka . The heatwave was one among the main causes of injury in 2018.
- Among the highest ten most affected countries, India, Germany and Japan suffered from extended periods of a heatwave during 2018.
- Japan topped the list of the foremost affected countries in 2018. The country was hit by three exceptionally strong extreme weather events during the year:
 1. Torrential rainfall from July 6-8 leading to flash floods and mudslides, killing quite 200 people and damaging over 5000 houses, resulting in the evacuation of two .3 million people.
 2. Severe heatwave from mid-July to August 2018 led to 138 fatalities and over 7000 people were hospitalized thanks to heat strokes and warmth exhaustion
 3. Typhoon Jebi in September 2018 broke several historical records for sustained winds in Japan, causing economic damage of over US\$ 12 billion.
- The Philippines was hit by Typhoon Mangkhut in September 2018, which was categorized as a category 5 typhoon, the foremost powerful typhoon recorded worldwide in 2018. The typhoon affected quite 250 000 people across the country.
- Germany experienced the second hottest year thanks to a severe heatwave. the amount between April and July 2018 was the hottest-ever recorded within the nation with temperatures 2.9°C above average. It resulted within the death of 1234 people. the state also witnessed severe drought in October 2018 thanks to less rainfall, which resulted during a massive decline in harvest.
- Madagascar became victim to Cyclone Ava in January 2018 and Cyclone Eliakim in March 2018, which together temporarily displaced around 70000 people, forcing them to hunt refuge in relief camps.

32. Climate Change Performance Index (CCPI) 2019

- India, for the primary time, ranked among the highest 10 during this year's global climate change Performance Index (CCPI). The Index measures the emissions, renewable energy share and climate policies of 57 countries and therefore the European Union . it had been presented at the climate summit in Madrid

Performance of India

- India was ranked 9th within the Index
- As per the index the present levels of per capita emissions and energy use are still comparatively low and, along side ambitious 2030 targets, end in high ratings for the GHG Emissions and Energy Use categories.
- While the country receives an overall medium rating within the Renewable Energy category, India's 2030 renewable energy target is rated very high for its well-below 2°C compatibility.
- National experts commend the govt for strong policies to support the expansion of renewable energy, which is required to satisfy the ambitious targets as recent renewable energy capacity additions are below the extent required.

- Despite an overall high rating for its Climate Policy performance, experts means that the govt has yet to develop a roadmap for the phase-out of fuel subsidies that might consequently reduce the country's high dependence on coal.

Performance of the countries round the world

- No country performs tolerably altogether index categories to realize an overall very high rating within the index. Therefore, once more the primary three ranks remain empty.
- In this year's index, Sweden leads the ranking on rank 4, followed by Denmark (5) and Morocco (6).
- The bottom five during this year's CCPI are Islamic Republic of Iran (57), Republic of Korea (58), Chinese Taipei (59), Saudi Arabia (60) and therefore the us (61), rated low or very low across most categories.

33. Sustainable Development Cell

Objective: to market environmentally sustainable coal mining within the country and address environmental concerns during the decommissioning or closure of mines.

Roles and functions:

- Advise, mentor, plan and monitor the mitigation measures taken by the coal companies for maximising the utilisation of obtainable resources during a sustainable way.
- Act as nodal point at Ministry of Coal level during this matter. Formulate the longer term policy framework for the environmental mitigation measures including the Mine closure Fund.

34. European Green Deal

The European Union has announced European Green Deal which contains additional measures it might fancy counter global climate change .

About:

- Two major decisions are at the guts of the ecu Green Deal.
- Achieving climate neutrality: The EU has promised to bring a law, binding on all member countries, to make sure it becomes "climate neutral" by 2050. Climate neutrality is achieved when a country's emissions are balanced by absorptions and removal of greenhouse gases from the atmosphere.
- Increase in its 2030 emission reduction target: In its climate action plan declared under the Paris Agreement, the EU has committed to creating a 50 per cent reduction in its emissions by 2030 compared to 1990 levels and work towards 55 per cent.

35. Jal Jeevan Mission

About Jal Jeevan Mission: The Mission was announced in August 2019.

The chief objective of the Mission is to supply piped water system (Har Ghar Jal) to all or any rural and concrete households by 2024.

It also aims to make local infrastructure for rainwater harvesting, groundwater recharge and management of household waste water for reuse in agriculture.

The Mission will converge with other Central and government Schemes to realize its objectives of sustainable water system management across the country.

The salient features of the rules are as follows:

- Time bound completion of schemes haunted under National Rural beverage Programme (NRDWP). No extension of your time or cost escalation are going to be allowed apart from the value towards retrofitting an equivalent to supply FHTCs.
- Priority to hide water quality affected habitations under JJM are going to be given.

- The following institutional arrangement has been proposed for implementation:
- National Jal Jeevan Mission at the Central level;
- State Water and Sanitation Mission (SWSM) at State level;
- District Water and Sanitation Mission (DWSM) at district level; and
- Gram Panchayat and/ or its sub-committees i.e. Village Water Sanitation Committee (VWSC)/ Paani Samiti at village Level.
- Extra budgetary resources are going to be made available for JJM and is proposed to be allocated along side Gross Budgetary Support among States/ UTs as per the allocation criteria.
- Good performance of the States/ UTs are going to be incentivized out of the fund not utilized by other States at the fag end of the fiscal year .
- The physical and financial progress of the mission is proposed to be monitored through IMIS and fund utilization through PFMS.
- Imbibing the spirit of 73rd Amendment of Constitution of India, Gram Panchayats or its sub-committees will play an important role in planning, designing, execution, operations and maintenance of the in-village infrastructure.
- Communities to be rewarded by providing 10% of the in-village infrastructure cost of the scheme which can be maintained by them as a fund to satisfy any unforeseen expenditure thanks to break down, etc.
- so as to make sure faster implementation with 'speed and scale' during a time-bound manner for providing FHTC in every rural household by 2024, it's proposed to forge partnership with all stakeholders in water sector namely; voluntary organizations, sector partners, professionals in water sector, foundations and CSR arms of varied corporates.
- The guidelines also propose that States will have a particular O&M policy especially to satisfy with the O&M requirements like monthly energy cost of the PWS scheme, by ensuring cost recovery from user groups and thereby avoiding any unwanted burden on public exchequer.
- JJM envisages a structural change within the provision of beverage supply services. The service provision should change to 'utility based approach' centered on 'service delivery'.
- Measuring water to determine the supply and therefore the quality using sensors based IoT technologies is additionally proposed within the guidelines.
- Third party inspection is proposed to be undertaken before making any payment to instill accountability.
- Functionality assessment of the schemes implemented under JJM are going to be done by Department/ NJJM.
- the rules also list support activities like HRD, IEC, Skill Development, etc. to be haunted under JJM.

36. Bio Rock for Coral reefs

Context

The Zoological Survey of India (ZSI), with help from Gujarat's forest department, is attempting for the first time a process to revive coral reefs using biorock or mineral accretion technology.

What is Biorock Technique?

- Biorock is that the name given to the substance formed by electro accumulation of minerals dissolved in seawater on steel structures that are lowered onto the ocean bed and are connected to an influence source, during this case solar panels that float on the surface.

- The technology works by passing a little amount of electrical current through electrodes within the water.
- When a charged anode and charged cathode are placed on the ocean floor, with an electrical current flowing between them, calcium ions combine with carbonate ions and cling to the structure (cathode).
- This leads to carbonate formation. Coral larvae adhere to the CaCO₃ and grow quickly.
- Fragments of broken corals also are tied to the biorock structure, where they're ready to grow a minimum of four to six times faster than their actual growth as they have not spend their energy in building their own carbonate skeletons.

37. Arctic region and sulphur emissions

The International Maritime Organization (IMO), the shipping agency of the United Nations, has banned ships from using fuels with sulphur content above 0.5 per cent, compared with 3.5 per cent previously.

What do the new IMO rules say?

- The IMO has banned ships from using fuels with sulphur content above 0.5 per cent, compared with 3.5 per cent previously.
- Sulphur oxides (SO_x), which are formed after combustion in engines, are known to cause respiratory symptoms and lung disease, while also resulting in acid precipitation.
- The new regulations, called IMO 2020, are considered the most important shake up for the oil and shipping industries in decades. It affects quite 50,000 merchant ships worldwide.
- The new limits are monitored and enforced by national authorities of nations that are members of the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex VI.
- Under the new policy, only ships fitted with sulphur-cleaning devices, referred to as scrubbers, are allowed to continue burning high-sulphur fuel.
- Alternatively, they will choose cleaner fuels, like marine gasoil (MGO) and really low-sulphur heating oil (VLSFO).

38. Ban on CFL and filament bulbs IN Kerala

Project Filament-free Kerala

- It was envisaged in 2018 as a part of the Kerala state's Urja Kerala mission.
- The filament-free Kerala project are going to be implemented by the Kerala State Electricity Board (KSEB) and therefore the Energy Management Centre, Kerala.
- Consumers within the state can place orders for LED bulbs on the KSEB website in exchange for existing filament bulbs.
- Nine-watt LED bulbs are being sold at reduced prices by the govt to encourage usage.
- Last year, Peelikode in Kasaragod district became the primary Panchayat within the country to be completely filament-free.
- The project is additionally a part of the long-term sustainable energy policy to scale back the dependence on conventional energy sources and instead maximise potential on renewable sources like solar and hydel power.

Why LED rather than CFL?

- The CFL uses mercury vapour which is dangerous for the environment and living beings.
- Its components like ballast, tungsten tube coated with barium increases its overall cost.
- The destruction of the LED is simpler than the CFL because LED doesn't have any harmful metal which pollutes the environment.
- With an estimated energy efficiency of 80-90% compared to standard light bulbs, LEDs significantly reduces energy consumption, and thus help economize by lowering electricity bills.

39. Protected Special Agricultural Zone' (PSAZ)

The Cauvery delta region in Tamil Nadu are going to be declared as 'Protected Special Agricultural Zone' (PSAZ) by the TN govt.

Cauvery delta PSAZ

- Declaring PSAZ ensures that specific region won't be granted permission for any new projects like those associated with hydrocarbons.
- Only Agro based Industries would tend permission to be built.
- The special protection are going to be bestowed on Cauvery Delta districts like Thanjavur, Tiruvarur, Nagappattinam, Pudukottai, Cuddalore, Ariyalur, Karur and Tiruchirappalli districts.

Significance of the move

- The Cauvery Delta Region is Tamil Nadu's rice bowl comprising above eight districts.
- It is simply and reasonable that projects like hydrocarbon exploration have raised concerns among farmers and other agriculture-based labourers.
- Drilling for extraction of oil and gas in these regions that hampers agriculture and posing much environmental impact or health hazards are going to be stopped immediately.

40. Convention on Migratory Species

'State of India's Birds 2020' (SoIB),

Context: The research titled 'State of India's Birds 2020' (SoIB), put together by over ten institutions and various citizen scientists, was released recently at the continued United Nations 13th Conference of the Parties to the Convention on Migratory Species in Gandhinagar, Gujarat.

Key findings:

1. Over 50 per cent of the 867 species studied, exhibit a population decline within the future while 146 are at great risk within the short term.
2. The populations of raptors (eagles, hawks, kites, etc.), migratory seabirds and birds that sleep in specialised habitats were the foremost affected within the past decades.
3. the amount of birds within the Western Ghats, which is taken into account one among the world's foremost biodiversity hotspots, also declined by almost 75 per cent since 2000.
4. Indian Peafowl, the national bird, has shown a dramatic increase in both abundance and distribution across the country. the amount of house sparrows has also stabilised nationwide, although there's still a marked decline in their population in cities.

41. Great Indian Bustard, the Asian Elephant and therefore the Bengal Florican in IUCN

India's proposal to incorporate the good Indian Bustard, the Asian Elephant and therefore the Bengal Florican in Appendix I of UN Convention on Migratory Species was unanimously accepted at the on-going thirteenth Conference of the Parties to the Convention on Migratory Species (CMS) in Gandhinagar.

- The Convention divides species into two appendices:
 - ✓ Appendix I: Lists species that are threatened with extinction.
 - ✓ Appendix II: Species that require or would benefit greatly from international cooperative conservation efforts.
- Parties work to conserve the listed species and their habitats through formal Agreements, and fewer formal Memorandums of Understanding (MOU).
- The Agreements and MOUs work to include all Range states of the target species, and not just parties to the convention.

Asian Elephant:

- The Government of India has declared Indian elephant as a National Heritage Animal.
- The Indian elephant is additionally provided the very best degree of legal protection by listing it in Schedule I of the Wildlife (Protection) Act, 1972.
- Placing the Indian elephant in Schedule I of the CMS Convention will fulfil the natural urge of migration of the Indian elephant across India's borders and back safely and thereby promote conservation of this species for the longer term generations.
- Intermixing of smaller sub populations in Nepal, Bangladesh, Bhutan and Myanmar will widen the gene base of those populations.
- It also will help to scale back human elephant conflicts in many parts of its migratory routes.
- Mainland Asian elephants/Indian elephants migrate over long distances in search of food and shelter, across states and countries. Some elephants are resident while others migrate regularly in annual migration cycles.
- The proportion of resident and migratory populations depends upon size of regional populations, also as on extent, degradation and fragmentation of their habitats.
- The challenges confronting Asian elephant conservation in most elephant Range State are:
 - ✓ Habitat loss and fragmentation
 - ✓ Human-elephant conflict
 - ✓ Poaching
 - ✓ Illegal trade of elephants

Great Indian Bustard:

- The Great Indian Bustard, an iconic, critically endangered and conservation dependent species, exhibits transboundary movements, and its migration exposes it to threats like hunting in boundary area of Pakistan-India and power-line collisions in India.
- Inclusion of the species in Appendix I of CMS will aide in transboundary conservation efforts facilitated by International conservation bodies and existing international laws and Agreement.
- The species features a small population of about 100–150 individuals that's largely restricted to the Thar Desert in Rajasthan, India.
- The species has disappeared from 90% of this range; their population has reduced by 90% within 50 years (six generations); and their threats are expected to extend in future.

Bengal Florican:

- The Bengal Florican, an iconic, critically species of topmost conservation priority, exhibits transboundary movements, and its migration exposes it to threats like land use changes, collision with power cable at boundary area of India-Nepal and probable power-line collisions.
- Inclusion of the species in Appendix I of CMS will aid in transboundary conservation efforts facilitated by International conservation bodies and existing international laws and agreement.
- Populations have declined as a results of habitat loss, hunting and therefore the species not breeds outside Protected Areas within the Indian subcontinent, except during a few areas of Assam.

42. 1000 spring Initiatives

Union Tribal Affairs Ministry has launched "1000 Spring Initiatives" and a web portal on GIS-based Spring Atlas with hydrological and chemical properties of the Springs on the occasion.

About

- The '1000 Springs Initiative' aims at improving access to safe and adequate water for the tribal communities living during a difficult and inaccessible a part of rural areas within the country.
- It is an integrated solution around natural springs.

- It includes the supply of infrastructure for piped water system for drinking; provision of water for irrigation; community-led total sanitation initiatives; and provision for water for backyard nutrition gardens, generating sustainable livelihood opportunities for the tribal people.
- It will help in harnessing the potential of perennial springs' water to deal with the natural scarcity of water in tribal areas.

Spring Atlas

- Springs are natural sources of groundwater discharge and are used extensively within the mountainous regions across the planet, including India.
- However, within the central and eastern Indian belt with quite 75% tribal population, it remains largely unrecognized and under-utilized.

43. Coral bleaching at the great barrier reef

Scientists have warned that the great barrier reef will face a critical period of heat stress over the approaching weeks, following the foremost widespread coral bleaching the wildlife has ever endured.

What is bleaching?

Basically bleaching is when the corals expel a particular algae referred to as zooxanthellae, which lives within the tissues of the coral during a symbiotic relationship. About 90% of the energy of the coral is provided by the zooxanthellae which are endowed with chlorophyll and other pigments. they're liable for the yellow or sepia colours of the host coral. additionally the zooxanthellae can live as endosymbionts with jellyfish also.

When a coral bleaches, it doesn't die but comes pretty on the brink of it. a number of the corals may survive the experience and recover once the ocean surface temperature returns to normal levels.

44. United for Biodiversity' coalition

The European Commission (EC) launched the 'United for Biodiversity' coalition on World Wildlife Day.

More about

- It was launched by European commission on World Wildlife Day (3 March).
- The coalition includes zoos, aquariums, botanical gardens, national parks, and explanation and science museums from round the world.
- The coalition urged for all institutions to hitch and boost public awareness about the character crisis, before the crucial COP-15 of the Convention on Biological Diversity in Kunming, China in October 2020.
- The coalition adopted a standard pledge, citing the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment finding that a million species were already in danger of extinction, and appeals to visitors to every of their institutions to boost their voice for nature.

45. Bharat Stage Emission Standards (BSES)

Green colour band for BS-VI 4W vehicles.

Standard Reference Date of Implementation

Bharat Stage II Euro 2 1 April 2005

Bharat Stage III Euro 3 1 April 2010

Bharat Stage IV Euro 4 1 April 2017

Bharat Stage VI Euro 6 April 2020 with a mandate (proposed)

Minutes of BS-VI

- Carmakers would need to put three pieces of kit — a DPF (diesel particulate filter), an SCR (selective catalytic reduction) system, and an LNT (Lean NOx trap) — to satisfy stringent BS-VI norms, all at an equivalent time.

- This is significant to curb both PM (particulate matter) and NOx (nitrogen oxides) emissions as mandated under the BS-VI norms.

How is BS-VI Different from BS-IV?

- The major difference between the existing BS-IV and forthcoming BS-VI norms is that the presence of sulphur within the fuel.
- While the BS-IV fuels contain 50 parts per million (ppm) sulphur, the BS-VI grade fuel only has 10 ppm sulphur content.
- Also, the harmful NOx (nitrogen oxides) from diesel cars are often brought down by nearly 70%.
- In the petrol cars, they will be reduced by 25%.
- However, once we mention air pollution, particulate like PM 2.5 and PM 10 are the foremost harmful components and therefore the BS-VI will bring the cancer-causing particulate in diesel cars by an outstanding 80%.

46. Acceptable limit Uranium Contamination

The Indian Standard IS 10500: 2012 for beverage specification has specified the utmost acceptable limits for radioactive residues as alpha and beta emitters, values in more than which render the water not suitable.

These requirements take under consideration all radioactive elements including uranium. No individual radioactive elements are specifically identified.

As per Bureau of Indian Standard (BIS), maximum permissible limit of Uranium is 0.03 mg/l (as per WHO provisional guidelines) altogether beverage standards after following due process of law .

47. Anti-smog guns & a 'polluter pays' policy

After two months of Supreme writ for installation of anti-smog guns in the least large construction sites, the devices are installed at 14 large projects in Delhi.

About Anti-Smog Guns:

- The anti-smog gun may be a canon that sprays atomized water 50 metres into the air to bring down suspended pollutants.
- The device is connected to a cistern and it are often taken to different parts of the town on a vehicle.
- The atomised water sprayed from the gun helps in bringing down the minute particles, which constitute the PM 2.5, the most pollutant.
- In January the Supreme Court had said that anti-smog guns should be mandatory in projects that need environmental clearance from the State or Centre and have a built-up area of over 20,000 square metres.
- The court directed that anti-smog guns should be utilized in Delhi and therefore the capital Regions (NCR) at large construction sites, construction stretches, mining activities, large parking sites on unpaved areas, during large public gatherings, demolition activities and while sprinkling on dust-prone traffic corridors.
- The authorities would need to prepare a 'polluter pays' policy to hide the value of installation of the anti-smog guns at these sites.

48. India's Tiger Survey Report 2020

In News- Recently, the Union Minister of Environment, Forest and global climate change released an updated report on India's Tiger Survey.

Key Points:

- The country has 70% of the world's tiger population and therefore the latest results of 2018 had shown that India now has an estimated 2967 tigers.
- India recorded a 33% increase in tiger numbers from 2014 to 2018
- Madhya Pradesh has the very best number of tigers at 526, closely followed by Karnataka (524) and Uttarakhand (442).
- Chhattisgarh and Mizoram saw a decline in tiger population and every one other States saw a "positive" increase.

49. Global Forest Resources Assessment 2020

Global Forest Resources Assessment 2020 has been released by the United Nations Food and Agriculture Organization (FAO).

The FRA 2020 has examined the status of, and trends in, more than 60 forest-related variables in 236 countries and territories within the period 1990–2020.

Key findings:

- Forest area has declined all across the planet within the past three decades. the planet lost 178 mha of forest since 1990, a neighborhood the dimensions of Libya.
- the speed of forest loss has also declined thanks to the expansion of sustainable management. the speed of forest loss in 2015-2020 declined to an estimated 10 million hectares (mha), down from 12 million hectares (mha) in 2010-2015.
- the world of naturally regenerating forests worldwide decreased since 1990, but the world of planted forests increased by 123 mha.

50. Nagar Van Scheme

Nagar Van Scheme: On the occasion of the planet Environment Day (June 5), Minister of Environment Prakash Javadekar launched the Nagar Van Scheme or Urban Forests Scheme with 200 corporations and cities across India.

Nagar Van Scheme

The Nagar Van or Urban Forests aims at developing 200 Urban Forests pan India within the coming five years. For this, the Warje Urban Forest situated in Maharashtra's Pune are going to be considered as a task model.

The Nagar Van are going to be built either on the prevailing forest land or another vacant land within the cities across India offered by the local bodies.

Who will fund the Scheme?

The Nagar Van or Urban Forests scheme are going to be funded by the CAMPA (Compensatory Afforestation Fund Management and Planning Authority).

51. Exotic species : New gudelines

As per the recently released guidelines:

1. Environment Ministry will collect stock information from the holders of such species through voluntary disclosure in next six months.
2. The registration are going to be finished the stock of animals, new progeny, also as for import and exchange.
3. The declarer wouldn't be required to supply any documentation in reference to the exotic live species if an equivalent has been declared within six months of the date of issue of the advisory.
4. For any declaration made after six months, the declarer shall be required to suits the documentation requirement under the extant laws and regulations.

5. Further, an individual trying to import a live exotic animal will need to submit an application for grant of a licence to the Directorate General of Foreign Trade (DGFT), under the provisions of the advisory.
6. The importer also will need to attach a No Objection Certificate (NOC) of the chief wildlife warden of the state concerned alongside the appliance .

What it includes? What it does not?

According to the advisory, the phrase “exotic live species” includes “animals named under the Appendices I, II and III of the Convention of International trade species of untamed Fauna and Flora” and “does not include species from the Schedules of the Wildlife (Protection) Act 1972”.

52. Decarbonizing Transport Project

NITI Aayog together with International Transport Forum (ITF) will launch the “Decarbonising Transport in India” project on 24 June.

More about the project

- The project intended to develop a pathway towards a low-carbon transport system for India.
- The project is together with the International Transport Forum (ITF).
- The project will design a tailor-made transport emissions assessment framework for India.
- It will provide the govt with an in depth understanding of current and future transport activity and therefore the related CO2 emissions as a basis for his or her decision-making.

Decarbonising Transport in Emerging Economies (DTEE)

- It supports transport decarbonisation across different world regions.
- India, Argentina, Azerbaijan, and Morocco are current participants.
- The DTEE is collaboration between the International Transport Forum (ITF) and therefore the Wuppertal Institute, supported by the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

53. SPARC

Scheme for Promotion of academic and Research Collaboration

Researchers from the Indian Institute of Technology Madras are collaborating with their counterparts in Germany to develop new materials for green energy solutions.

What is SPARC?

It is an initiative of the Ministry of Human Resource Development.

- The scheme aims at improving the research ecosystem of India’s higher educational institutions by facilitating academic and research collaborations between Indian Institutions and therefore the best institutions within the world.
- Under this Scheme, 600 joint research proposals are going to be awarded for two years to facilitate strong research collaboration between Indian research groups with the simplest in school faculty and renowned research groups within the leading universities of the planet , in areas that are at the leading edge of science or with direct social relevance to the mankind, specifically India.

Indian Institute of Technology Kharagpur is that the National Coordinating Institute to implement the SPARC programme.

54. India State of Forest Report (ISFR)

The report is published by the Forest Survey of India (FSI) which has been mandated to assess the forest and tree resources of the country including wall-to-wall forest cover mapping during a biennial cycle. Starting 1987, 16 assessments are completed thus far. ISFR 2019 is that the 16th report within the series.

India State of Forest Report 2019: Key Findings

The key findings of the ISFR 2019 are as follows:

Forest Cover of India is 21.67%

The total forest cover of the country is 7,12,249 sq km which is 21.67% of the geographic area of the country.

Tree Cover of India is 2.89%

The tree cover of the country is estimated as 95,027 sq km which is 2.89% of the geographic area.

Forest Cover + Tree Cover is 24.56%

The total Forest and Tree Cover of the country is 8,07,276 sq km which is 24.56% of the geographic area of the country.

There is a rise in forest and tree cover

The current assessment shows a rise of three ,976 sq km (0.56%) of forest cover, 1,212 sq km (1.29%) of tree cover and 5,188 sq km (0.65%) of forest and tree cover put together, at the national level as compared to the previous assessment i.e. ISFR 2017.

There is a decrease in forest cover in Recorded Forest Areas (RFA)

Forest cover within the RFA/GW has shown a small decrease of 330 sq km (0.05%) whereas there's a rise of 4,306 sq km of forest cover outside the RFA/GW as compared to the previous assessment of 2017.

The highest increase in forest cover is in Karnataka

The top five states in terms of increase in forest cover are Karnataka (1,025 sq km), Andhra Pradesh (990 sq km), Kerala (823 sq km), Jammu & Kashmir (371 sq km) and Himachal Pradesh (334 sq km).

In hill districts, the forest cover is 40.30%

Forest cover within the hill districts of the country is 2,84,006 sq km, which is 40.30% of the entire geographic area of those districts. The present assessment shows a rise of 544 sq km (0.19%) in 140 hill districts of the country.

In tribal districts, the forest cover is 37.54%

The total forest cover within the tribal districts is 4,22,351 sq km, which is 37.54% of the geographic area of those districts. The present assessment shows a decrease of 741 sq km of forest cover within the RFA/GW within the tribal districts and a rise of 1,922 sq km outside.

In the North-Eastern region, the forest cover is 65.05%

Total forest cover within the North-Eastern region is 1,70,541 sq km, which is 65.05% of its geographic area. The present assessment shows a decrease of forest cover to the extent of 765 sq km (0.45%) within the region. Apart from Assam and Tripura, all the States within the region show a decrease in forest cover.

Mangrove cover shows a rise of 1.10%

Mangrove cover within the country has increased by 54 sq km (1.10%) as compared to the previous assessment.

The total growing stock of wood is 5915 million cum

The total growing stock of wood within the country is estimated 5,915.76 million cum comprising 4,273.47 million cum inside forest areas and 1,642.29 million cum outside recorded forest areas (TOF). The typical growing stock per hectare within the forest has been estimated as 55.69 cum.

There is a rise within the bamboo bearing area. The total bamboo bearing area of the country is estimated as 1,60,037 sq km. there's a rise of three ,229 sq km within the bamboo bearing area as compared to the estimate of ISFR 2017.

Total Carbon Stock within the forest is 7124.6 million tonnes. In the present assessment, the entire carbon stock within the forest is estimated as 7,124.6 million tonnes. there's a rise of 42.6 million tonnes within the carbon stock of the country as compared to the last assessment of 2017. The annual increase is 21.3 million tonnes, which is 78.1 million tonnes CO₂ eq.

Soil Organic Carbon contributes 56% of the entire forest carbon stock. Soil Organic Carbon (SOC) represents the most important pool of carbon stock in forests, which has been estimated at 4,004 million tonnes. The SOC contributes 56% to the entire forest carbon stock of the country.

Wetlands cover 3.83% of Recorded Forest Area. There are 62,466 wetlands covering 3.83% of the world within the RFA/GW of the country. the entire number of wetlands located within the RFA/GW is 8.13%. Amongst the States, Gujarat has the most important area of wetlands within RFA within the country followed by West Bengal .

Highest dependence on forests for fuelwood is in Maharashtra. Dependence of fuelwood on forests is highest within the State of Maharashtra, whereas, for fodder, small timber and bamboo, dependence is highest in Madhya Pradesh. it's been assessed that the annual removal of the tiny timber by the people living in forest fringe villages is almost 7% of the typical annual yield of forests within the country.

Major Invasive Species.

The information on the world suffering from five major invasive species in States/UTs supported analysis of NFI data has been given within the present ISFR.

21.40% of the forest cover in India is 'highly' to 'extremely' fire-prone. Fire prone forest areas of various severity classes are mapped within the grids of 5km x 5km supported the frequency of forest fires. The analysis reveals that 21.40% of the forest cover of the country is very to extremely fire-prone.

55. Miyawaki method : Rebuild Kerala'

Recently, the Kerala government has decided to adopt the Miyawaki method of afforestation in schools, government buildings, residential complexes and revenue land.

- The Miyawaki method was successful in growing mini forests in areas destroyed by natural calamities and therefore the coastlines of Japan.

About Miyawaki method:

- This method originated in Japan and is now increasingly adopted in other parts of the planet . it's named after the japanese botanist and plant ecologist Akira Miyawaki.
- It is that the technique of growing dense plantations during a short time and by using this it's possible to grow a spread of native species in as little space.

The process explained:

- A pit has got to be dug, and its dimensions depend upon the available space. Before digging Hell , the list of tree species should be chosen judiciously. As there's little or no space to figure around with, trees with varying heights should be chosen.
- Fill it with one layer of compost, followed by a layer of natural waste like bagasse and coconut shells then top it with a layer of red soil.
- Plant the saplings following interval and tree height specifications.
- The whole process are often completed in two to 3 weeks. The saplings need to be maintained regularly for a year.
- Cost analysis- The exercise will cost approximately ₹ 20,000 for 600 sq. ft mini forest.

56. Green Credit Scheme

The Forest Advisory Committee has approved the 'Green Credit Scheme' that would allow "forests" to be traded as a commodity. If implemented, it allows the Forest Department to outsource one among its responsibilities of reforestation to non-government agencies.

- Under the Forest Conservation Act 1980, whenever forest land is diverted for non-forest purposes like mining or industry, the project developer is meant to spot land and buy planting forests over an equal area of non-forest land, or when that's not available, twice the world of degraded forest land.
- It also must pay the State Forest Department the present economic equivalent, called Net Present Value, of the forest land.
- This money currently gets collected under the Compensatory Afforestation Fund.

What is the 'Green Credit Scheme'?

- The proposed 'Green Credit Scheme', because it is named , allows agencies, they might be private companies, village forest communities, to spot land and start growing plantations.
- After three years, they might be eligible to be considered as compensatory forest land if they met the Forest Department's criteria.
- An industry needing forest land could then approach the agency and pay it for parcels of such forested land, and this is able to then be transferred to the Forest Department and be recorded as forest land.
- The participating agency are going to be liberal to trade its asset, that's a plantation, in parcels, with project proponents who need forest land.
- Once finalised, the scheme will overhaul the compensatory afforestation process by accrediting private or public-private partnership companies to boost plantations near reserved forests which may be bought in lieu of projects involving forest diversion.
- If the corporate raising the plantation doesn't wish to trade it, it can retain it and harvest the timber once ready.

57. Coastal Regulation Zone(CRZ)

News: Recently, the Ministry of Environment and Forest has relaxed Coastal Regulation Zone(CRZ) rules for Iris versicolor beaches.

About the relaxation of CRZ rules:

- India's Coastal Regulation Zone(CRZ) rules don't allow the development of infrastructure on beaches and islands.
- But the Iris versicolor certification requires the beaches to make infrastructures like portable toilet blocks, greywater treatment plants, a solar energy plant, seating facilities, CCTV surveillance.
- Hence, the government has notified that construction activities and facilities shall be permitted within the CRZs including Islands for the aim of Iris versicolor Certification in beaches.
- However, these activities are subject to maintaining a minimum distance of 10 meters from the high water Line (HTL).

58. Australian Bushfires

What is causing the fires?

Each year there's a fire season during the Australian summer, with hot, dry weather making it easy for blazes to start out and spread.

Natural causes are responsible most of the time, like lightning strikes in drought-affected forests. Dry lightning was liable for starting variety of fires in Victoria's East Gippsland region.

Humans also can be responsible. NSW police have charged a minimum of 24 people with deliberately starting bushfires.

Regions affected:

There are fires in every Australian state , but New South Wales has been hardest hit. Blazes have torn through bushland, wooded areas, and national parks just like the Blue Mountains. Some of Australia's largest cities have also been affected, including Melbourne and Sydney -- where fires have damaged homes within the outer suburbs and thick plumes of smoke have blanketed the city .

59. Hydro chlorofluorocarbon (HCFC)-141 b

- India has successfully achieved the entire phase-out of hydrochlorofluorocarbon (HCFC)-141 b, consistent with the ministry of environment, forest and global climate change .
- HCFC- 141 b may be a chemical employed by foam manufacturers as a blowing agent within the production of rigid polyurethane (PU) foams.
- It is one among the foremost potent ozone-depleting chemicals after Chlorofluorocarbons (CFCs).
- The complete phase-out of HCFC 141 b from the country within the foam sector is among the primary at this scale in Article 5 parties (developing countries) under the Montreal Protocol.

With Courtesy :

Indian express, The Hindu, Wikipedia, The Economist, The Jagran Josh, The down to earth, Web pages of various ministry, Blogs of Shashi tharoor, Civil daily, Next IAS, Raja Mandala, J. Sai Deepak, Indiakanon.com, InsightsonindiaIAS, The Frontline, Byjus, Indiatoday, VajiramandalilIAS, Rajya Sabha tv, Lok Sabha tv, IASbaba, Gsscore, India yearbook, NextIAS